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DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR 1987

COMPLETED 1842. mf 119 ORIGINAL

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE

COMMITTEE ON APPROPRIATIONS

HOUSE OF REPRESENTATIVES

NINETY-NINTH CONGRESS

SECOND SESSION

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DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR 1987

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE

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DOE/MA-0064/4
Volume 6 of 7

Congressional Budget Request

Fossil Energy Research and Development
Naval Petroleum and Oil Shale Reserves

Volume 6

FY 1987

U.S. Department of Energy
Assistant Secretary,
Management and Administration
Office of the Controller
Washington, D.C. 20585

February 1986

DEPARTMENT OF ENERGY

FISCAL YEAR 1987 CONGRESSIONAL BUDGET REQUEST

CLEAN COAL TECHNOLOGY

FOSSIL ENERGY RESEARCH AND DEVELOPMENT

NAVAL PETROLEUM AND OIL SHALE RESERVES

VOLUME 6

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DEPARTMENT OF ENERGY

FISCAL YEAR 1987 CONGRESSIONAL BUDGET REQUEST

SUMMARY OF ESTIMATES BY APPROPRIATIONS

(in thousands of dollars)

	FY 1985 Actual BA	FY 1986 Estimate BA	FY 1987 Request BA
Appropriations Before The Energy and Water Development Subcommittees:			
Energy Supply Research and Development	1,967,490	1,696,298	1,254,162
Uranium Enrichment	237,956	190,512	---
General Science and Research	724,860	655,928	773,400
Atomic Energy Defense Activities	7,322,321	7,231,664	8,230,000
Departmental Administration	128,602	150,319	151,082
Alaska Power Administration	3,233	3,245	2,881
Bonneville Power Administration	284,771	330,000	276,100
Southeastern Power Administration	35,744	---	19,647
Southwestern Power Administration	31,208	29,191	25,337
Western Area Power Administration	218,230	195,910	240,309
Western Area Power Emergency Fund	---	---	---
Federal Energy Regulatory Commission	54,543	41,989	20,325
Nuclear Waste Fund	327,669	499,037	769,349
Geothermal Resources Development Fund	121	69	72
Subtotal, Appropriations Before the Energy and Water Development Subcommittees	$11,336,748	$11,024,162	$11,762,664

DEPARTMENT OF ENERGY

FISCAL YEAR 1987 CONGRESSIONAL BUDGET REQUEST

SUMMARY OF ESTIMATES BY APPROPRIATIONS

(in thousands of dollars)

	FY 1985 Actual BA	FY 1986 Estimate BA	FY 1987 Request BA
Appropriations Before Interior and Related Agencies Subcommittees:			
Alternative Fuels Production	$ 1,169,895	$ ---	$ ---
Clean Coal Technology	---	---	---
Fossil Energy Research and Development	289,048	311,954	82,767
Naval Petroleum and Oil Shale Reserves	156,874	13,002	127,108
Energy Conservation	457,436	427,512	39,433
Energy Regulation	27,139	23,423	21,850
Emergency Preparedness	6,045	5,750	6,044
Strategic Petroleum Reserve	2,049,550	107,533	---
Energy Information Activities	60,919	57,724	59,651
Subtotal, Interior and Related Agencies Subcommittees	4,216,906	946,898	336,853
Subtotal, Energy and Water Development Subcommittees	11,336,748	11,024,162	11,762,664
Subtotal, Department of Energy	15,553,654	11,971,060	12,099,517
Permanent - Indefinite Appropriations:			
Payments to States	1,052	570	570
Total, Department of Energy	$15,554,706	$11,971,630	$12,100,087

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Department of Energy
FY 1987 Congressional Staffing Request
Total Work Force

	FY1985 FTE USAGE	FY1986 CONGR REQ	FY1987 -FY86	FY1987 CONGR REQ
ENERGY & WATER SUBCOMMITTEE				
HEADQUARTERS	4,865	4,965	-18	4,947
FIELD	9,133	9,185	111	9,296
SUBCOMMITTEE TOTAL	13,998	14,150	93	14,243
INTERIOR SUBCOMMITTEE				
HEADQUARTERS	1,353	1,304	-166	1,138
FIELD	907	896	-226	670
SUBCOMMITTEE TOTAL	2,260	2,200	-392	1,808
GRAND TOTAL	16,258	16,350	-299	16,051
ADJUSTMENT		-132	-198	-330
ADJUSTED TOTAL	16,258	16,218	-497	15,721

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL STAFFING REQUEST
TOTAL WORK FORCE

	FY1985 FTE USAGE	FY1986 CONGR REQ	FY1987 -FY86	FY1987 CONGR REQ
10:ENERGY SUPPLY RESEARCH AND DEV	937	934	-34	900
HEADQUARTERS	811	820	-28	792
FIELD	126	114	-6	108
15:URANIUM ENRICHMENT	69	66	1	67
HEADQUARTERS	58	55	1	56
FIELD	11	11	0	11
20:GENERAL SCIENCE AND RESEARCH	37	39	0	39
HEADQUARTERS	37	39	0	39
25:ATOMIC ENERGY DEFENSE ACTIVITI	2,618	2,702	131	2,833
HEADQUARTERS	496	518	9	527
FIELD	2,122	2,184	122	2,306
30:DEPARTMENTAL ADMINISTRATION	3,307	3,332	-5	3,327
HEADQUARTERS	1,721	1,726	0	1,726
FIELD	1,586	1,606	-5	1,601
34:ALASKA POWER ADMINISTRATION	37	38	0	38
FIELD	37	38	0	38
36:BONNEVILLE POWER ADMIN	3,510	3,480	0	3,480
FIELD	3,510	3,480	0	3,480
38:SOUTHEASTERN POWER ADMIN	38	40	0	40
FIELD	38	40	0	40
42:SOUTHWESTERN POWER ADMIN	186	186	0	186
FIELD	186	186	0	186
46:WESTERN AREA POWER ADMIN	1,181	1,160	0	1,160
FIELD	1,181	1,160	0	1,160
50:WAPA - COLORADO RIVER BASIN	219	219	0	219
FIELD	219	219	0	219
52:FEDERAL ENERGY REGULATORY COMM	1,617	1,659	0	1,659
HEADQUARTERS	1,617	1,659	0	1,659
54:NUCLEAR WASTE FUND	238	292	0	292
HEADQUARTERS	123	147	0	147
FIELD	115	145	0	145
56:GEOTHERMAL RESOURCES DEV FUND	2	1	0	1
HEADQUARTERS	2	1	0	1
65:FOSSIL ENERGY RESEARCH AND DEV	714	700	-161	539
HEADQUARTERS	151	135	-26	109
FIELD	563	565	-135	430
70:NAVAL PETROL & OIL SHALE RES	104	104	-9	95
HEADQUARTERS	23	23	0	23
FIELD	81	81	-9	72
75:ENERGY CONSERVATION	333	352	-134	218
HEADQUARTERS	208	227	-79	148
FIELD	125	125	-55	70
80:EMERGENCY PREPAREDNESS	74	71	0	71
HEADQUARTERS	74	71	0	71
81:ECONOMIC REGULATION	377	348	-58	290
HEADQUARTERS	377	348	-58	290
85:STRATEGIC PETROLEUM RESERVE	178	152	-32	120
HEADQUARTERS	40	27	-5	22
FIELD	138	125	-27	98
90:ENERGY INFORMATION ACTIVITIES	480	481	-6	475
HEADQUARTERS	480	481	-6	475
94:ADVANCES FOR CO-OP WORK	2	2	0	2
FIELD	2	2	0	2
GRAND TOTAL	16,258	16,350	-299	16,051
ADJUSTMENT		-132	-198	-330
ADJUSTED TOTAL	16,258	16,218	-497	15,721

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Department of Energy
FY 1987 CONGRESSIONAL BUDGET
MAJOR ACTIVITY OVERVIEW

Clean Coal Technology Program

Background

Coal is the most abundant energy resource in the United States with recoverable reserves estimated to be 935 billion barrels crude oil equivalent (COE). However, petroleum and natural gas, whose proven reserves are estimated to be 28 billion barrels and 35 billion barrels COE respectively, are the most utilized fossil fuels in the U.S. energy consuming marketplace despite their significantly higher costs relative to coal. Even though oil and natural gas prices are projected to remain significantly higher than coal, their demand is expected to remain relatively the same as it was in 1984. Coal, primarily a utility and large industrial boiler fuel, is not expected to significantly penetrate the light industrial, commercial, residential or transportation sectors now dominated by oil and natural gas.

Coal is demand driven. The capacity exists to increase coal supplies to meet significant increases in demand. To make coal utilization look more attractive, the Department of Energy and the private sector have been conducting research through proof-of-concept on a wide variety of coal technologies aimed at improving the economics of using coal, improving the environmental performance associated with the use of coal and converting coal into forms that could allow it to be used as a lower cost substitute to oil and natural gas.

On December 19, 1985, P.L. 99-190, "An Act Making Appropriations for the Department of the Interior and Related Agencies for the Fiscal Year Ending September 30, 1986, and for Other Purposes," was signed into law. This statute, among other things, provides funds to conduct cost-shared clean coal technology projects for the construction and operation of facilities that would demonstrate the feasibility of future commercial applications of such technology.

P.L. 99-190 makes available a total of $397.6 million for this program, as follows: $99.4 million in FY 1986, $149.1 million in FY 1987, and $149.1 million in FY 1988. Funding is provided from the $397.6 million for contracting, travel, and ancillary costs incurred by the Department of Energy for implementation of the Clean Coal Technology Program. P.L. 99-190 also requires a minimum of 50 per centum cost sharing by the private sector on each project, cost sharing in each phase of each project, constraints on valuation of "in-kind" cost sharing by the private sector, time limitations for issuing the solicitations, proposal preparation and project selection(s), among other things.

The Clean Coal Technology Program is related to, but not directly a continuation of, the effort that was undertaken by DOE pursuant to Section 321 of the "Act Making Continuing Appropriations for Fiscal Year 1985," P.L. 98-473, 98 Stat. 1874. Section 321 directed the Secretary of Energy to solicit from the private sector "statements of interest in, and proposals for projects employing emerging clean coal technologies," analyze the information received, and submit a report to Congress that "assesses the potential usefulness of each emerging clean coal technology... and ...identifies the extent to which federal incentives, including financial assistance, will accelerate the commercial availability of these technologies." In response to the November 27, 1984, Program Announcement, 49 Fed. Reg. 46696, DOE received one hundred and seventy-five submissions with project values totaling over $8 billion. On May 1, 1985, DOE submitted its findings in the "Report to Congress on Emerging Clean Coal Technologies" (DOE/S-0034).

In August 1985, the President signed into law H.R. 2577, "Making Supplemental Appropriations for the Fiscal Year Ending September 30, 1985, and for Other Purposes."

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The Conference Report 99-236 accompanying H.R. 2577 advised DOE to immediately begin the preparation of a competitive solicitation for cost-shared clean coal technology projects, to consult with the Environmental Protection Agency (EPA) on technologies traditionally supported by EPA and on environmental regulatory considerations, and provided guidelines for the preparation of the solicitation in addition to those cited earlier in the accompanying Senate Report 99-82.

Program Goals and Objectives

The overall goal of the Clean Coal Technology Program is to conduct cost-shared construction and operation of clean coal technology projects to demonstrate the feasibility of future commercial applications of these technologies. When complete, it is expected that these demonstration projects will provide sufficient technical, economic, environmental, health and safety, and operational information at a large enough scale to enable the private sector to make rational commercialization decisions.

It is the intent of the Department to meet this goal in accord with the following program objectives:

- Issue a competitive solicitation for Federal assistance to the private sector applicable to the broad array of coal-based emerging clean coal technology systems for use in all energy market applications.
- Enter into cost-shared cooperative agreements with the private sector to demonstrate selected systems.

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
LEAD TABLE
CLEAN COAL TECHNOLOGY
ENERGY SECURITY RESERVE
(Tabular dollars in thousands. Narrative material in whole dollars.)

	FY 1985 Appropriation	FY 1986 Appropriation	FY 1987 Base	FY 1987 Request	Request vs Base
Clean coal technology (FE)					
Cooperative agreements:					
Operating expenses	$ ...	$97,909	$97,909	$147,112	$+49,203
Subtotal	...	97,909	97,909	147,112	+49,203
Program direction:					
Operating expenses	$ ...	1,491	1,491	1,988	+497
Subtotal	...	1,491	1,491	1,988	+497
Total					
Operating expenses	...	99,400	99,400	149,100 1/	+49,700
Clean coal technology	$ ...	$99,400	$99,400	$149,100	$+49,700

1/ FY 1987 funding was made available via the FY 1986 Continuing Resolution.

Authorization: P.L. 96-126, P.L. 98-473
P.L. 99-190

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Summary of Changes

FY 1986 Appropriation enacted	$ 99,400
Program increases and decreases:	
Coal Coal Technology	
o P.L. 99-190 made available $99.4 million in FY 1986, $149.1 million in FY 1987, and $149.1 million in FY 1988	+49,700
FY 1987 budget request	$149,100

Coal coal technology:

Goals/Objectives:

The principal goal of this program, as stated in P.L. 99-190, is "for the purposes of conducting cost-shared clean coal technology projects for the construction and operation of facilities to demonstrate the feasibility of future commerical operation." It is targeted at the wide variety of emerging clean coal technologies located in the U.S., and using U.S. coals in a wide variety of market applications.

In FY 1986, in response to P.L. 99-190, the Department issued a competitive solicitation requesting proposals for cost-shared clean coal technology demonstration projects and selected projects for cooperative agreement negotiations. In FY 1987, DOE will complete the cooperative agreement negotiations and work called for under the agreements will be initiated.

FY 1986 Accomplishments:

- Issue a competitive solicitation requesting proposals for clean coal technology demonstration projects.
- Select projects for cooperative agreement negotiations.

Budget Request By Subactivity:	FY 1986 Approp.	FY 1987 Request	Net Change
Cooperative agreements	$97,909	$147,112	$+49,203

FY 1987 funding for cooperative agreements would support, on a cost-shared basis with the private sector, demonstration of advanced technologies to gather the data needed for their ultimate commercialization. Successful demonstration and commercial application of clean coal technologies could result in increased coal utilization and make coal a more desirable fuel in markets now dominated by oil and gas.

To accomplish these goals, the Department will issue a competitive solicitation for Federal assistance to the private sector that are applicable to the broad array of coal-based emerging clean coal technology systems for use in all energy market applications. After evaluating all submitted proposals, the Department would then enter into cost-shared cooperative agreements with the private sector to demonstrate the selected systems.

Program direction	$ 1,491	$ 1,988	$ +497

In order to implement and execute the Clean Coal Technology Program, the Department has been given the authority to charge certain costs related to program direction against appropriations for this program. These costs represent primarily travel and contracted technical support related to the pre-award proposal evaluation phase and the post-award monitoring and data base activities.

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The FY 1987 funding for program direction will provide for contractual services and in-house support in performing post-award monitoring and technical data base activities. These activities would include attendance at project review meetings and the collection, processing and dissemination of technical data.

In addition, funding is provided to cover travel costs of Energy Technology Centers and Headquarters personnel associated with post-award monitoring activities.

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DEPARTMENT OF ENERGY

FISCAL YEAR 1987 CONGRESSIONAL BUDGET REQUEST

FOSSIL ENERGY RESEARCH AND DEVELOPMENT

VOLUME 6

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DEPARTMENT OF ENERGY

Proposed Appropriation Language

Fossil Energy Research and Development

(Including Transfer of Funds)

For necessary expenses in carrying out fossil energy research and development activities, under the authority of the Department of Energy Organization Act (Public Law 95-91), including the acquisition of interest, including defeasible and equitable interests in any real property or any facility or for plant or facility acquisition or expansion, [$312,848,000] $82,767,000, to remain available until expended, of which [$535,000] $221,000 is for the functions of the Office of the Federal Inspector for the Alaska Natural Gas Transportation System established pursuant to the authority of Public Law 94-586 (90 Stat. 2908-2909), and [$8,230,000 to be derived by transfer from unobligated balances in the "Fossil energy construction" account, $2,010,000 to be derived by transfer from the account entitled "Alternative fuels production", of which $200,000 is derived from Public Law 98-146 for a wood pellet gasifier facility, and $2,775,000] in addition, $437,000 to be derived by transfer from amounts derived from fees for guarantees of obligations collected pursuant to section 19 of the Federal Nonnuclear Energy Research and Development Act of 1974, as amended (42 U.S.C. 5919), and deposited in the "Energy security reserve" established by Public Law 96-126: Provided, That no part of the sum herein made available shall be used for the field testing of nuclear explosives in the recovery of oil and gas: Provided further, That notwithstanding any other provision of law, funds [appropriated] available under this head in Public Law [97-394 for a Western Hemisphere alternative fuels facility feasibility study, which remain unobligated,] 99-190 for implementation of the June 1984 multiyear, cost-shared magneto-hydrodynamics program shall be available for carrying out any fossil energy research and development activities[: Provided further, That $15,000,000 of the sum provided under this heading shall be available for demonstration of the Kilngas coal gasification process, with the provision that the United States Treasury shall be repaid up to double the total Federal expenditure for such process from proceeds to the participants from the commercial sale, lease, manufacture, or use of such process].

[Of the funds herein provided, $29,000,000 is for implementation of the June, 1984 multiyear, cost-shared magneto-hydrodynamics program targeted on proof-of-concept testing: Provided further, That 10 per centum private sector cash or in-kind contributions shall be required for obligations incurred in fiscal year 1986, 20 per centum private sector cash or in-kind contributions shall be required for obligations in fiscal year 1987, and for each subsequent fiscal year's obligations private sector contributions shall increase by 5 per centum over the life of the proof-of-concept plan: Provided further, That existing facilities, equipment, and supplies, or previously expended research or development funds are not cost-sharing for the purposed of this appropriation, except as amortized, depreciated, or expensed in normal business practice: Provided further, That cost-sharing shall not be required for the costs of constructing or operating government-owned facilities or for the costs of Government organizations, National Laboratories, or universities and such costs shall not be used in calculating the required percentage for private sector contributions: Provided further, That private sector contribution percentages need not be met on each contract but must be met in total for each fiscal year.] (Department of the Interior and Related Agencies Appropriations Act, 1986, as included in Public Law 99-190.)

DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
AMOUNTS AVAILABLE FOR OBLIGATION
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(In thousands of dollars)

	FY 1986	FY 1987
Appropriation:		
Definite	$310,971	$ 82,767
Sequestration of Funds Pursuant to Gramm, Rudman, Hollings Bill	-14,017	...
Permanent Authority	15,000	...
Appropriation Total	$311,954	$ 82,767
Unobligated Balances:		
Start of year unobligated balances	$ 56,904	$ 67,948
Unobligated balances transferred to other appropriations	...	...
Unobligated balances transferred from other appropriations	4,785	437
End of year unobligated balances	-67,948	-1,062
Recovery of prior year obligations	6,000	...
Total Obligations	$311,695	$150,090

DEPARTMENT OF ENERGY

FISCAL YEAR 1987 CONGRESSIONAL BUDGET REQUEST

SUMMARY OF ESTIMATES BY APPROPRIATION BY MAJOR ACTIVITY

FOSSIL ENERGY RESEARCH AND DEVELOPMENT

(Budget Authority in Thousands of Dollars)

	FY 1985 Actual	FY 1986 Estimate	FY 1987 Request
COAL:			
Control Technology and Coal Preparation	$ 34,791	$ 31,950	$ 18,147
Advanced Research and Technology Development	30,804	33,849	27,224
Coal Liquefaction	31,110	31,620	9,147
Combustion Systems	30,092	29,113	9,169
Fuel Cells	40,472	34,057	5,000
Heat Engines and Heat Recovery	11,850	12,314	7,942
Underground Coal Gasification	5,705	4,072	---
Magnetohydrodynamics	30,721	27,717	---
Surface Coal Gasification	35,134	41,323	5,598
Subtotal, Coal	250,679	246,015	82,227
PETROLEUM:			
Advanced Process Technology	5,364	5,523	1,811
Enhanced Oil Recovery	11,702	11,454	4,484
Oil Shale	14,628	12,136	3,595
Subtotal, Petroleum	31,694	29,113	9,890
GAS:			
Unconventional Gas Recovery	10,142	8,503	5,252
Subtotal, Gas	10,142	8,503	5,252
POLICY AND MANAGEMENT:			
Headquarters Program Direction	8,273	13,380	11,260
ETC Program Direction	37,907	39,265	28,740
Federal Inspector for the Alaska Gas Pipeline	1,401	511	221
Capital Equipment	4,425	2,865	---
Construction	4,916	3,332	---
Subtotal, Policy and Management	56,922	59,353	40,221
COOPERATIVE VENTURE R&D POOLS	---	---	12,500
Subtotal, Fossil Energy	349,437	342,984	150,090
Use of Prior Year Balances and Other Adjustments	-60,389	-31,030	-67,323
Total, Fossil Energy R&D	$289,048	$311,954	$ 82,767

Department of Energy
FY 1987 CONGRESSIONAL BUDGET
MAJOR ACTIVITY OVERVIEW

Fossil Energy

PRINCIPAL ISSUES IN FOSSIL ENERGY BETWEEN NOW AND 2000

Fossil fuels -- oil, natural gas and coal -- accounted for 90 percent of the energy consumed in the United States during 1984, and will supply the majority of the Nation's energy needs well into the next century. Availability of these fuels is thus a major component of the national energy policy.

The resources to supply various fossil fuels domestically have shifted significantly during this century, and will continue to change in the future. At first, wood and then coal were the dominant fuels used during the early phases in the development of modern industrialized societies. The major growth in energy demand has occurred during a period of relatively plentiful and inexpensive supplies of oil and natural gas -- a trend which began in the mid-1920's. As a result, both the economies of the developed countries and the economic aspirations of many lesser developed countries are based upon energy production and utilization technologies (and their associated highly sophisticated, manufacturing and distribution infrastructures) to which these premium[1] fossil fuels are essential. Currently, oil and gas account for approximately 65 percent of both free world and U.S. energy consumption. From the perspective of relative resource abundance, this fuel-use pattern is imbalanced. Coal, accounting for over 80 percent of the estimated U.S. recoverable fossil reserves, contributes only some 23 percent of the energy consumption. Oil, the least abundant (and most critical) resource, constituting about 3 percent of U.S. estimated recoverable fossil fuel reserves, accounts for over 42 percent of consumption. If the vast U.S. oil shale and peat resources are included, the imbalance becomes even more pronounced.

The imbalance between the consumption/resource ratio for conventionally produced gas and particularly oil versus that for other far more abundant domestic fuels could have potentially adverse future implications for U.S. energy stability and security. This is reflected in projections done for the U.S. Energy Information Administration's Annual Energy Outlook (published January 1985), which show gross oil imports exceeding 50 percent of domestic liquid needs by 1995 due to the projected availability of moderately priced imports. In spite of this, there are a number of sound business/economic reasons why industry is unlikely to make a rapid transition in fuel-use patterns.

- There are major fuel-consuming sectors (e.g., transportation, industrial process heat applications and small industrial and commercial boilers), where practical technologies for the direct utilization of coal, electricity or renewables have not yet evolved.

- The capital investment currently in place for fuel-specific energy production and utilization equipment is large. The payback period to recover the investment in new capacity is long compared to the frequency of unanticipated (and historically realized) and significant changes in oil prices, market conditions, and environmental concerns. Thus, even if conditions look favorable at a particular point in time for investing in new capacity, there is uncertainty as to whether such conditions will continue to persist.

1/ "Premium" refers to gaseous and liquid fuels, particularly liquids, that command a relatively higher price because of their convenience of use.

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- The front-end capital components of energy costs associated with coal, oil shale, tar sands and other unconventional fossil energy resources are significantly higher than those associated with the intensively utilized conventional liquid and gas resources, and the lead times required for system planning and construction are longer, thus increasing overall risks related to future uncertainties.

- The inherent potential for unacceptable environmental impacts (and attendant costs) associated with certain abundant fossil resources, such as coal and oil shale, is relatively high.

The potentially slow pace of the shift away from heavy reliance on conventional sources of premium fuels is reflected in projections made for the National Energy Policy Plan (NEPP), which for the year 2010 indicate oil and gas will supply between 44 and 49 percent of total U.S. primary energy consumption (all fuels), with imports representing from 39 to 41 percent of oil and gas consumption. A number of uncertainties exist, however, that make it difficult to estimate the pace of this shift, including: future price and availability of oil and gas from conventional resources (as illustrated by current reversal in world oil price trends); environmental performance requirements; technical, economic and environmental performance of new fossil and other competing technologies; future demand for different fuels; and other market parameters which may change significantly during the life of an investment.

Electricity is an important intermediate activity on the spectrum between energy producer and energy consumer. Electric power generation consumes about 35 percent of the primary energy used in the United States. About 28 percent of the fossil energy used and 82 percent of the coal used is for electricity generation. Current DOE estimates indicate that electricity demand growth is likely to increase at an annual rate of 2.5 percent over the period 1984-2000. Since other end-use fuel demand is projected to increase at a much slower rate than electricity growth, the electricity share of final energy consumption is projected to increase during the remainder of this century.

Availability of an adequate supply of electricity at reasonable costs to meet current and future needs has come to be viewed as a "right" by many consumers. Although sufficient electricity supplies should be available throughout the 1980's, the long-term outlook for continued availability of reliable supplies at reasonable costs is not certain.

NEPP projects that significant additional generating capacity will be required to meet future demands, to replace obsolete facilities, to displace high cost fuels (oil and natural gas) and to provide for effective reserve margins. Based upon NEPP projections, coal use for electricity generation by the year 2000 could amount to 23 percent of total primary energy use. That would account for 84 percent of total coal used domestically. All of this is projected to occur at the same time that environmental questions about coal mining and use continue to be of serious public concern. In terms of tonnages, consumption of coal to generate electricity is expected to grow from the present 664 million tons annually to some 1,059 million tons in the year 2000 - a 60 percent increase in 16 years. If coal is going to attain projected use levels for generating electricity, it is essential that improved technologies be developed to allow the use of coal in both new and existing power plants in an economically competitive and environmentally acceptable manner.

ROLE OF DOE'S FOSSIL ENERGY PROGRAMS

While the Nation is fortunate to have abundant fossil energy resources, diverse and extensive advances are needed in the scientific and engineering knowledge base in order to achieve an effective utilization balance in the long term. Systematic technical advances must occur in all stages of the research, development, and commercialization cycle. To a large extent, this cycle can be described in terms of the path taken by technology development and the stages through which new technologies pass until they

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reach the market as competitive energy investment options. Stated simply, the technology development path consists of five stages. Basic research seeks to develop fundamental scientific knowledge, including a fundamental understanding of the physical and chemical properties of unconventional fuel sources or energy systems, leading to the definition of new energy R&D concepts. Applied research includes activities to resolve broad engineering and physical science problems in specific fossil technologies and related areas. However, practical utility may not be proven at this stage. Proof-of-concept is where enough has been learned to resolve specific problems to determine the technical and environmental feasibility of the integrated process. Data are generated to evaluate critical scale-up parameters, characterize sub-systems, processes, and products, and to permit preliminary economic projections to be made. Process development is directed at increasingly larger scale engineering design, construction and operation of energy systems with the objective of reducing technical risks and improving the process operability, reliability, economics, and environmental impact. Commercialization consists of a wide variety of efforts to eliminate technical, economic and institutional barriers required for acceptance of a new energy technology into the marketplace.

The latter stages of this cycle are the most costly but the risks are also the most defined and predictable. This is where private sector responsibilities take over to move advanced technologies into commercial reality. The earlier stages (i.e., basic research through proof-of-concept), feed this research and development (R&D) investment pipeline with the results of long-term, high-risk, and potentially high- payoff research. While R&D in these earlier stages may have a very high benefit/cost ratio from the public perspective, private sector investment may be restricted because payoffs are frequently difficult to predict, highly risky or would require an exceptionally long time to be recognized, or cannot be captured by individual firms.

Thus, there are reasons why it may be desirable for the government to undertake certain energy activities including energy conservation programs and, to encourage development of abundant and presently uneconomical or technically difficult domestic resources so that these resources will be more attractive to the marketplace. This includes providing federal funding assistance for early stages of the R&D cycle for the development of new technologies; for R&D to remove environmental uncertainties, and to make resources under federal control available at a fair price; and other actions that do not introduce inefficiencies through inappropriate intervention in the marketplace.

Fossil Energy Strategic Objectives

As discussed in the NEPP, the Administration's goal in energy policy continues to be that Americans should have an adequate supply of energy, maintained at a reasonable cost. This goal presupposes three broad conceptual objectives: energy stability, energy security and energy strength.

Energy stability means a situation in which problems of energy availability and price no longer destablize the U.S. economy and our way of life. Energy security means that adequate supplies of energy are physically available to U.S. consumers from both domestic and foreign souces, and that we are less vulnerable to disruptions in energy supply and better prepared to handle them if they should occur. Energy security leads to energy strength, whereby it is possible to effectively exploit the vast energy resource base of the United States. New supply and utilization technology can contribute to all of these objectives, particularly energy strength.

Implicit in achieving the national goal and objectives described above are the following strategies:

- Minimize federal control and involvement in energy markets while maintaining public health and safety and environmental quality.
- Promote a balanced and diversified energy resource system.

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In addition to NEPP, Administration policy and guidance, DOE mission statements, Congressional guidance and analyses of fossil fuel supply and utilization trends and issues provide the framework within which the Office of Fossil Energy R&D program has been developed. Included in this framework are the strategic objectives which follow, and, in effect, provide an indication of how FE programs are addressing the issues outlined earlier.

Recognizing the need to effect an orderly transition to greater utilization of the most abundant domestic fossil fuel resources, two complementary overall strategic objectives have been established for FE:

1. Increase the contribution of coal by improvements in environmental, technical, and economic performance and increase the number of areas of application and flexibility of use of coal-based systems.

2. Increase the effective resource base for premium gas and liquid fuels through enhanced resource recovery and/or production of liquid and gaseous fuel analogs from coal, shale, and tar sands.

The FE program pursues these strategic objectives through activities which identify research opportunities and conduct research (and transfer the results of such research to the user community) in the extraction, processing, and utilization of domestic fossil fuel resources which are not being pursued by the private sector because of high-risk/long-term characteristics. This research should offer substantial potential improvements in terms of enhanced liquid and gaseous fuel supply or reduced demand and/or improved efficiency, economics, or environmental protection. FE plans, coordinates, and carries out research to the extent necessary to establish proof-of-concept and to provide the essential information for the private sector to make process development and commercial plant deployment decisions.

Crosscutting R&D Objectives

There are two strategic objectives that cut across all of the fossil fuel R&D programs. One is that process/technology research will be coupled with the appropriate associated environmental research to economically manage environmental impacts of processing and using fossil fuels. This includes work needed to establish data bases that help mitigate problems rather than merely expand the range of questions and concerns. Energy and environmental objectives may appear to conflict more frequently than converge, but they are not mutually exclusive. The question is not one of "either/or," rather, it is a matter of determining how to achieve a proper balance between technology issues (such as resource recovery, process efficiency, etc.) and environmental intrusions. The objective of this research is to characterize potential impacts and the performance of new and developmental systems in controlling these impacts so that more efficient solutions to environmental concerns are available on a schedule consistent with the development of advanced technology.

The second objective is that all process/technology research will be coupled to advanced research activities needed to improve the understanding of fundamental scientific and engineering mechanisms. Such understanding is critical to effectively assessing the ways fossil resources can be utilized, and provides the basis for new ideas to lead to future major innovations in fossil fuel technologies. These activities are directed toward the advancement of those scientific and technical disciplines that underlie the development of all Fossil Energy technologies. They include fundamental research on physical, chemical and thermodynamic characteristics of fossil fuels and their derivatives, fluid phenomena, solids transport, multiphase flow, combustion, materials, instrumentation and analytical techniques, environmental sciences, geosciences, innovative concepts, coordination of international activities in Fossil Energy, and sponsoring long-term scientific coal research at universities.

Program Objectives

There are a number of program objectives listed below that apply to the research and development in Fossil Energy.

Coal:

- Foster development of economic methods for modifying the overall physical characteristics of coal (reduce ash and sulfur, but do not change state) to permit the resultant cleaned/modified coal to be used dry or as a slurry to permit utilization in a number of combustion systems.

- Identify and foster development of new processes and/or equipment that are capable of using coal directly or as modified fuel forms in such a way as to increase the efficiency in the use of the fuel, extend its applicability and/or allow for its substitution for oil or gas.

- Foster development of lower cost more environmentally-acceptable technologies for the generation of electricity from coal which can increase the flexibility of the utility industry to meet capacity expansion and replacement needs.

- Identify and foster development of new, useful and environmentally acceptable approaches for managing coal cleaning waste, ash, and other waste product disposal.

- Foster development of improved and more economic and environmentally acceptable technologies to allow coal to be converted (including both above ground and underground processes) into a gaseous fuel or synthesis gas suitable for the requirements of new as well as existing end uses.

- Foster development of economically attractive and environmentally acceptable technologies to allow coal to be converted (including both direct and indirect liquefaction) to a complete range of petroleum substitutes that can be used for transportation, industrial, utility, and chemical applications.

- Identify and foster development of new fuel forms that can be produced from coal (other than those cited above) as an energy source in existing or new energy conversion systems.

Oil:

- Foster development of economically attractive and environmentally acceptable technologies for (1) enhanced light oil recovery, (2) in situ thermal recovery of heavy oil and tar sand bitumen, and (3) conversion of oil shale, all of which can add to the supplies of oil from conventional sources.

Gas:

- Foster development of unconventional and novel natural gas resources which can add to the supplies of natural gas from conventional sources.

While these objectives provide the framework for most FE R&D activities, it should be noted that there are other activities that are performed within the context of the national energy goal and strategies. These activities, which reside in FE because of its management and technical experience/expertise include: general policy and strategic studies related to fossil energy; studies and analysis on fossil fuel transportation issues and certain energy supply aspects of leasing; management of the Liquefied Gaseous Fuels Spill Test Facility program to address safety issues associated with large spills; and support to federal agencies on fossil energy related matters.

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Program Guidelines

In addition to the above program objectives, there are a number of guidelines and criteria that are observed in the planning and execution of FE programs. Two of the most prominent include private sector participation and international cooperation. Regarding the former, private sector input is solicited during the program planning process through a variety of mechanisms, including advisory groups, workshops and peer reviews. In the program execution phase, substantial emphasis is placed on cost-sharing to facilitate the transfer of technology to the private sector and to reduce federal expenditures. Inherent in this approach is an attempt to attract research performers that have a long-term institutional commitment to an area of research and to the ultimate application of the research results. In general, industry will be more willing to invest its money in potential high payoff R&D as risks and uncertainties are reduced, and thus cost-sharing frequently becomes more attractive as R&D approaches the proof-of-concept stage.

One of the primary goals of all the applied research areas in FE is to effectively transfer technology from Federal and university laboratories to private industry. The earlier industry is involved, and the more directly that the research agenda is guided by the companies' own economic self-interest, the more effective the transfer is likely to be. In FY 1987, Fossil Energy will "pilot-test" a special case of this cost-sharing approach known as cooperative ventures. The approach will be to solicit proposals from the private sector in a broad area of applied research, where two or more firms would propose to form a "pre-competitive" cooperative venture with DOE. It is DOE's intent to impose minimal constraints on potential proposals and to select on the basis of technical and financial merit among all proposals regardless of the specific areas proposed for further R&D. Resultant royalties or other profits would be shared proportionately by the participants. To the extent that industry is willing to enter into such ventures, benefits could result such as better leveraging of scarce Federal funds and aiding technology transfer by increasing the number of private sector participants.

Many of the same factors that make participation with the U.S. private sector desirable have motivated FE to seek international cooperative efforts. There is additional interest in that the U.S. Government is actively seeking to facilitate the long-term reduction of U.S. and international dependence on oil by supporting research that could lead to the development and substitution of other energy forms. The overriding concern is that any cooperative efforts must support FE program objectives.

FOSSIL ENERGY PROGRAM BUDGET

The levels of federal support in the budget for the various Fossil Energy technologies are believed to be appropriate given the need to progressively reduce Federal budget deficits, and when compared to the needs and to the levels of federal funding both for other energy related technologies and for other governmental activities.

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DEPARTMENT OF ENERGY

FISCAL YEAR 1987 CONGRESSIONAL BUDGET REQUEST

FOSSIL ENERGY RESEARCH AND DEVELOPMENT

COAL

VOLUME 6

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
LEAD TABLE
COAL
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(Tabular dollars in thousands. Narrative material in whole dollars.)

	FY 1985 Appropriation	FY 1986 1/ Appropriation	FY 1987 Base	FY 1987 Request	Request vs Base
Control technology and coal preparation (FE)					
Coal preparation:					
Operating expenses	$10,965	$12,716	$12,716	$ 6,443	$ -6,273
Subtotal	10,965	12,716	12,716	6,443	-6,273
Flue gas cleanup:					
Operating expenses	14,511	10,952	10,952	7,541	-3,411
Subtotal	14,511	10,952	10,952	7,541	-3,411
Gas stream cleanup:					
Operating expenses	7,348	7,105	7,105	3,839	-3,266
Subtotal	7,348	7,105	7,105	3,839	-3,266
Waste management:					
Operating expenses	1,967	1,177	1,177	324	-853
Subtotal	1,967	1,177	1,177	324	-853
Total					
Operating expenses	34,791	31,950	31,950	18,147	-13,803
Control technology and coal preparation	$34,791	$31,950	$31,950	$18,147	$-13,803
Staffing Total FTE's: Direct	54	55	55	45	-10
Indirect	30	28	28	22	-6

1/ Adjustments to the FY 1986 Appropriation are shown on the table on the following page.

Authorization: Section 4, P.L. 93-577
Section 301, P.L. 95-91

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Department of Energy

FY 1987 Congressional Budget Request

Adjustments to FY 1986 Appropriations

	FY 1986 Confer.	General Reduction	Gramm-Rudman-Hollings	Total
Control Technology and Coal Preparation (FE)				
Coal Preparation Operating Expenses	$13,305	$-69	$-520	$12,716
Flue Gas Cleanup Operating Expenses	11,460	-60	-448	10,952
Gas Stream Cleanup Operating Expenses	7,433	-38	-290	7,105
Waste Management Operating Expenses	1,232	-7	-48	1,177
Subtotal, Control Technology and Coal Preparation	$33,430	$-174	$-1,306	$31,950
General Reduction: Operating Expenses	-174	174	-	-
Total, Control Technology and Coal Preparation	$33,256	-	$-1,306	$31,950
Operating Expenses	33,256	-	-1,306	31,950

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Summary of Changes

FY 1986 Appropriation enacted	$31,950
Program increases and decreases:	
Coal Preparation o Research efforts will be completed and not continued into FY 1987 in the areas of low rank coal hot water drying, ultrasonic comminution, fine coal dewatering, and contracted efforts in the development of advanced physical coal cleaning concepts. Technology base activities will be continued in the areas of Gravimelt development, chemically modified coals, microbial desulfurization, joint DOE/EPRI development and test, ultrafine coal characterization, and in-house research on chemical coal cleaning, physical coal cleaning and organic sulfur chemistry	-6,273
Flue Gas Cleanup o Complete activities on electron beam processess, pressure hydrated lime furnace sorbent injection, fine particulate control and dry scrubber SO_x/NO_x process	-3,411
Gas Stream Cleanup o Complete subpilot testing of PFBC particulate removal devices and zinc ferrite sorbent testing at subpilot scale; terminate tests of second generation PFBC particulate removal devices; continue contaminant control base activities	-3,266
Waste Management o Complete several ongoing Waste Management activities and continue technology base activities which include sampling and characterization of organic and inorganic species in solid wastes produced by emerging technologies, and energy recovery from coal preparation wastes	-853
FY 1987 budget request	$18,147

Control technology and coal preparation:

Goals/Objectives:

Economic and social barriers to a rapid, widespread replacement of oil by coal derive mainly from quality differences. The inert matter in even our best coals imposes cost penalties in transportation and utilization. Additional costs are incurred in burning most U.S. coals because of the considerable sulfur or nature of the mineral constituents or trace elements they contain. This added cost burden results from specific requirements for environmental management, waste disposal, combustor design modifications, and ancillary equipment capacity. In summary, the ultimate cost of electricity, process heat, or shaft horsepower is strongly dependent on technologies dealing with coal quality, environmental emissions, and waste disposal. In-depth research for interdependent technologies of coal beneficiation, gas cleaning, and waste disposal is essential to critical economic and engineering analyses of site-specific coal utilization requirements. This, in turn, is necessary to achieve the highest degree of cost effectiveness in the expanded utilization of U.S. coals. The goals of the Control Technology and Coal Preparation activity are to identify and develop a range of advanced engineering approaches capable of:

- Upgrading the quality of U.S. coals to quality levels that will allow coal-based fuels to penetrate those markets now being supplied by liquid fuels in an economically sound and environmentally acceptable manner.
- Improving the ability to remove flue gas pollutants for compliance with emission standards.

- o Developing a capability to reduce the emissions of suspected acid rain precursors from existing, uncontrolled coal-fired boilers that is significantly lower in cost than commercially available methods.
- o Removing undesirable substances produced during gasification and/or combustion from process streams, thus protecting utilization equipment such as turbines and fuel cells.
- o Providing waste disposal technologies that will permit compliance with environmental pollution regulations without excessive costs.

The functional organization of this activity forms four logical subactivities: (1) Coal preparation; (2) Flue gas cleanup; (3) Gas stream cleanup; and (4) Waste management.

Coal preparation is directed toward the development of advanced coal cleaning technologies that will reduce the ash and sulfur content of U.S. coals so that the product can be formulated into a high quality fuel that could replace oil and/or gas and reduce environmental emissions of suspected acid rain precursors from coal-fired power plants in both new and retrofit applications. Flue gas cleanup addresses the removal of pollution causing contaminants from the stack gases of conventional combustion units to meet environmental standards. Efforts will be focused on fundamental research for processes for the combined removal of NO_x, SO_x, and particulates, both for utility and industrial applications. Gas stream cleanup includes the technology for removal of contaminants from gasifier and combustor process streams prior to utilization in advanced power conversion cycles such as gas turbines and fuel cells. Both hardware and environmental protection are key concerns. Waste management focuses primarily on waste sampling and characterization from coal preparation wastes.

FY 1986 Accomplishments:

Major accomplishments expected in FY 1986 include:

Coal Preparation

- o Completed development of low-rank coal hot-water drying process and investigation of low-rank fine coal cleaning.
- o Completed testing of Gravimelt and microwave chemical coal cleaning reactors at 20 lb/hr scale.
- o Issued PRDA to identify and investigate advanced concepts for chemically modified coals.
- o Continued development of advanced physical coal cleaning processes including joint DOE/EPRI test at EPRI Coal Cleaning Test Facility.
- o Continued research on microbial removal of organic sulfur from coal.
- o Completed coal preparation research activities at Southern Illinois University.
- o Completed research on coal characterization, chemical cleaning, physical cleaning and ancillary operations at Ames National Laboratory.
- o Completed research on microbubble flotation technology advanced concepts.
- o Completed efforts on ultrasonic comminution and fine coal dewatering.
- o Continued research on the chemical and physical characterization of ultra-fine coal.
- o Continued research on the beneficiation of chemically modified coals and advanced concepts for chemical coal cleaning.
- o Continued research on advanced physical coal cleaning concepts such as selective agglomeration, ultrafine coal flotation, electrostatically enhanced magnetic separation and true heavy liquid cycloning.

Flue Gas Cleanup

- o Completed bench scale evaluation of electron beam charging and acoustic agglomeration techniques for fine particulate control.
- o Continued proof-of-concept test and evaluation of candidate acid rain control technology processes.
- o Completed sorbent development for boiler injection applications for SO_2 control.
- o Completed proof-of-concept test and evaluation of the electron beam/ammonia simultaneous NO_x/SO_x cleanup process.

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- Continued proof-of-concept test and evaluation of the fluidized bed copper oxide simultaneous NO_x/SO_x cleanup process.
- Continued research on advanced NO_x/SO_x chemistry and thermodynamics, and bench scale development of advanced NO_x/SO_x cleanup processes.
- Completed research on potential process modifications for achieving combined NO_x/SO_x control (dry scrubber process).
- Completed evaluation of Glo-Klen catalyst.

Gas Stream Cleanup

- Terminated program definition phase for selecting cleanup devices for PFBC system integration proof-of-concept testing.
- Continued economic/systems analysis for PFBC alkali metals and particulate removal devices and desulfurization processes to determine their future potential.
- Completed the testing of the zinc ferrite desulfurization process on a fluidized bed gasifier.
- Continued investigations into process modification control methods for ammonia, aromatic hydrocarbons, and tar cracking.
- Continued on-line coal gasification tests for selected high temperature, high pressure sulfur removal processes for gasifier/turbine combined cycle application.
- Conducted bench scale testing of novel high temperature and pressure desulfurization processes using gasification produced fuel gas.
- Completed research on control and removal of trace contaminants of arsine, aromatic hydrocarbons, and hydrogen chloride to molten carbonate fuel cells.
- Initiated preliminary experimental research of novel processes to treat regeneration tail gases from high temperature desulfurization of coal gases.
- Continued test and evaluation of soot and particulate control in coal fuel gas to molten carbonate fuel cells.
- Completed PFBC subpilot testing of ceramic cross flow filter and screenless granular bed filter.
- Completed coal gasification bench scale testing of ceramic bag filter and electrostatic precipitator.
- Completed laboratory investigation of acoustic agglomeration, a second generation particle control concept.
- Completed investigation of boundary layer turbulence in cyclone separators to establish its form, impact on particle collection and possible methods of suppression.
- Initiated direct coal fired turbine studies PRDA.
- Continued research on specific instrumentation problems; investigation of chemical and physical properties of contaminants.
- Determined concept feasibility of SO_2 removal with selected sorbents.

Waste Management

- Continued sampling and characterization of organic and inorganic species in solid wastes produced by emerging coal use technologies.
- Completed initial phase of waste management laboratory analyses of coal wastes.
- Continued adsorption and degradation studies of polyaromatic hydrocarbons (PAH's) compounds in soil.
- Continued field study initiated during last quarter of FY 1985 with identification and establishment of multi-sites for monitoring leachate and behavior of solid wastes under actual field conditions.
- Continued R&D for extracting energy from coal preparation wastes.
- Continued MIS data base activity.

Budget Request By Subactivity:	FY 1986 Approp.	FY 1987 Request	Net Change
Coal preparation	$12,716	$ 6,443	$ -6,273

The goal of the coal preparation program is to develop coal cleaning technology to reduce the ash and sulfur content of U.S. coals so that the product can be formulated

into a high quality fuel that could replace oil and/or natural gas and reduce environmental emissions in both new and retrofit applications in utility boilers, industrial boilers and process heaters, residential/commercial boilers and furnaces, and heat engines such as gas turbines and diesel engines.

Research efforts will be completed and not continued into FY 1987 in the areas of low rank coal hot water drying, ultrasonic comminution, fine coal dewatering, and contracted efforts in the development of advanced physical coal cleaning concepts.

Most coals resist cleaning by conventional practices either because the ash and sulfur constituents are too finely dispersed in the coal structure or because the organic sulfur content, which does not respond to physical cleaning, is too high. The principal thrust of the coal preparation program is thus directed toward:

- o New and advanced cost-effective technologies to clean and condition finely comminuted (ground) coal as necessary to liberate finely dispersed pyritic sulfur and ash particles.
- o Advanced experimental methods to extract organic sulfur from coal.

The program encompasses laboratory research efforts focused on the removal of finely dispersed mineral matter impurities, pyritic sulfur, and organic sulfur from all coals. The program includes research on physical and chemical beneficiation techniques and supporting research such as micro-characterization. In the physical cleaning area, selective coalescence, froth flotation, and specific gravity techniques which have demonstrated the ability to remove 90 percent of the pyritic sulfur from selected coals, are being developed. Instrumentation methods such as scanning electron microscopy, image analysis, etc., are being utilized for characterizing the finely ground raw coal and cleaned products in order to develop the basic data needed in the development of the various cleaning technologies.

The cleaned coal products developed under this subactivity will become feedstock for activities in Combustion Systems and Heat Engines aimed at the conversion of existing utility and industrial units from oil or gas to coal; new units fired either conventionally or by coal slurries; direct firing of coal in power conversion equipment (e.g., gas turbines and diesels); export steam coal; and for utilization in existing coal-fired boilers as a cost-effective means of reducing emissions of suspected acid rain precursors. New equipment designs and/or conversion of existing units to coal or coal-based slurries, initiated in the late 1980's, will clearly benefit from the availability of the engineering data developed in this program.

The following major accomplishments are anticipated for FY 1987:

- o Continue work on the characterization of ultrafine coal to determine the beneficiation potentials of alternative advanced physical fine coal cleaning technologies.
- o Continue in-house research on the beneficiation of chemically modified coals, advanced concepts for chemical coal cleaning, and in-house studies of fundamental organic sulfur chemistry.
- o Continue research on advanced physical coal cleaning concepts such as: selective agglomeration, ultra-fine coal flotation, electrostatically enhanced magnetic separation and true heavy liquid cycloning.
- o Complete design of Gravimelt continuous operation chemical coal cleaning system.
- o Continue joint DOE/EPRI project to develop and test advanced physical coal cleaning concepts.
- o Continue research to develop techniques for microbial removal of organic sulfur from coal.
- o Continue investigation of advanced concepts identified in FY 1986 for chemically modified coals.

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	FY 1986 Approp.	FY 1987 Request	Net Change
Flue gas cleanup	$10,952	$ 7,541	$ -3,411

This program focuses on the development of technology for cost-effective, and environmentally superior processes that remove pollutants from coal combustion gas streams in both utility and industrial boilers. Its intent is to help assure that existing and projected utilization of the nation's most abundant energy resource, coal, can continue without adverse environmental effects.

The FY 1987 program reflects completion in FY 1986 of research and development activities in a number of technology areas including electron beam based processes, pressure hydrated lime furnace sorbent injection, fine particulate control technology, and the dry scrubber SO_x/NO_x control process.

The primary pollutants of concern as regulated and identified in the New Source Performance Standards (NSPS), consist of sulfur oxides (SO_x), nitrogen oxides (NO_x), and particulates. SO_x are formed in the combustion process as the result of the oxidation of sulfides contained in the mineral portion of the coal as well as the oxidation of organically bound sulfur. Most of the sulfur is oxidized to sulfur dioxide (SO_2) with a small percentage oxidized to sulfur trioxide (SO_3). Nitric oxide (NO) is formed during the combustion process from the reaction of molecular nitrogen and oxygen in the combustion air (thermal NO) and from the oxidation of nitrogen compounds in the coal (fuel bound NO). While essentially 100 percent of the nitrogen oxide consists of NO, it is reported as NO_x because the EPA standard was written as the nitrogen dioxide (NO_2) equivalent of all nitrogen oxides. Particulates result from the ash content of the coal.

Existing flue gas desulfurization technology is capable of meeting sulfur removal requirements but is very costly and in many cases merely converts an air pollution problem to a solid waste disposal problem in the form of difficult-to-handle sludges, the disposition of which measurably adds to overall environmental control costs. Combustion modification can control NO_x emissions to existing standards. If these standards were to be tightened, however, an additional process would have to be added. Based on available technology, this process would most likely involve a gaseous phase NO destruction technique by reaction with ammonia in the presence of a catalyst. The addition of a process of this type for NO control would measurably contribute to the cost and complexity of the overall environmental control system. Therefore, the primary emphasis of the flue gas cleanup program has been placed on approaches to attain these high levels of SO_2 and NO control in a more cost effective manner, namely through the development of processes with the potential to remove both pollutants simultaneously in a one process step. In order to avoid the problems and costs associated with the handling and disposal of scrubber sludges, primary consideration will be given to those processes that generate relatively benign or possibly useable or marketable waste products.

In addition to the technology being developed for application to new construction under existing stringent requirements, there is a need for the development of low cost, retrofittable technology for the control of acid rain precursor emissions from existing plants. Total replacement of existing plants, with new plants meeting NSPS, is not expected until at least the year 2020. Currently available options for SO_2 control consist primarily of conventional physical coal cleaning, fuel switching, and wet and dry scrubbing. Each has associated advantages and disadvantages. Conventional coal cleaning is already in fairly wide practice where it is presently economical to do so. Capability, to significantly reduce the sulfur content of coals by conventional coal preparation, however, is limited since only some of the inorganic sulfur contained in the mineral portion of the coal can be removed. Switching to low sulfur coals is likely to severely impact the high sulfur coal industry, increase fuel costs due to greater demand as well as higher transportation costs, and cause plant derating unless

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substantial plant modifications are undertaken to accommodate the different properties characteristic of low sulfur coal. Wet and dry scrubbers are effective (in excess of 90 percent SO_2 control), but are relatively expensive to purchase and operate. Reliability and availability have been problem areas as well as waste handling and disposal. Therefore, development of a low cost technology of relatively modest performance that is capable of being retrofitted to existing boilers would greatly enhance the capability for attaining SO_2 reductions.

The need for and justification of a Federal role in this area is clear cut. System requirements are essentially set by Government regulations. Because of the long lead-time between the initiation of research and the eventual commercialization of technology, the private sector is for the most part unwilling to pursue this type of work on their own since changing regulations can render their developments obsolete and their expenditures fruitless.

Anticipated FY 1987 accomplishments include:

- Complete proof-of-concept test and evaluation of the low temperature dry hydrate and dolomite lime slurry induct injection acid rain control technology processes.
- Continue research in advanced NO_x/SO_x chemistry and laboratory/bench scale development of advanced NO_x/SO_x cleanup processes.
- Continue proof-of-concept test and evaluation of the fluidized bed copper oxide simultaneous NOx/SOx cleanup process.

	FY 1986 Approp.	FY 1987 Request	Net Change
Gas stream cleanup	$ 7,105	$ 3,839	$ -3,266

The FY 1987 program reflects completion in FY 1986 of a number of research and development activities including subpilot testing of PFBC particulate removal devices, alkali control devices and zinc ferrite sorbent testing.

The primary objective of this program is to develop the required technology base in gas stream cleanup for applications in post combustion/utilization devices used as advanced power conversion systems including both molten carbonate fuel cells and turbines. Turbine cleanup concerns removal of contaminants from gasification fuel gases, pressurized fluidized bed combustors and direct coal-fired combustor gas streams. The high temperature, high pressure contaminant removal control technologies have direct application to fossil fuel conversion processes including oil shale mist particulate separation and methanation shift conversion (catalyst protection from poisoning, etc.). The gas streams range up to 2400°F in temperature and 500 psi in pressure and contain contaminants that, if not removed, will cause failure of the conversion cycle equipment, as well as prevent meeting the environmental emissions standards. Cleanup at an elevated temperature offers advantages of increased cycle thermal efficiency and reduced capital cost for downstream power conversion applications. Capital cost reductions are attributable to the elimination of the need for process equipment to quench and reheat the gas stream and to treat the contaminated waste water from the quenching process. Contaminants of concern are dependent upon the specific application. Energy conversion systems will have to meet NSPS requirements in terms of NO_x, SO_x and particulate emissions. Emphasis in combustion gas cleanup has been on the control of alkalies and particulates found in pressurized fluidized bed combustor (PFBC) gas streams powering gas turbine combined cycles. The PFBC has demonstrated the capability to meet NSPS with respect to NO_x and SO_x emissions. The turbines, however, are subject to corrosion, erosion, and deposition. Corrosion in PFB turbines is primarily caused by the presence of alkali surface compounds in the liquid state. Erosion results from the impact of high velocity particulate material. Deposition is caused by a buildup of fine particles on the turbine surfaces. Since the PFB gas turbine operates on sensible heat from the gas stream, it is essential that cleanup processes be accomplished at or near bed temperature. At present, there are no commercially available processes for alkali vapor

removal. The gasifier can be used as an energy source for either a gasifier/gas turbine combined cycle or a fuel cell. In addition to the alkalies and particulates previously mentioned, the gasifier gas turbine system must control NO_x precursors such as ammonia as well as sulfur compounds. For fuel cell applications the control of suflur is especially critical since tolerance to sulfur compounds is on the order of 0.1 to 1.0 parts per million to minimize sulfide formation at the nickel anode. The fuel cell also requires stringent control of other contaminants in the fuel gas stream such as chlorides and particulates.

Anticipated FY 1987 accomplishments include:

- o Continue process modification control methods for ammonia.
- o Continue fundamental R&D of particulate control and SO_2 control concepts for direct fired coal-fueled turbines.
- o Complete particulate control tests for gasification.
- o Continue instrument development (alkali and particulate - real time) to insure control of cleanup systems.
- o Conduct fundamental R&D of the mechanisms of contaminant formation, interaction and removal in gas stream cleanup technology.
- o Continue contaminant tests for molten carbonate fuel cells (MCFC).

	FY 1986 Approp.	FY 1987 Request	Net Change
Waste management	$ 1,177	$ 324	$ -853

The goal of the waste management program is to promote the development of waste management technologies that will permit existing and advanced fossil fuel utilization processes to achieve their respective goals for reducing oil and natural gas consumption while complying with environmental regulations without excessive costs. The Waste Management program has been directed at performing the required research and technology verification for dealing with the large quantities of solid waste products to enhance the environmental, economic, and social acceptance of the abundant coal resource as an energy source.

The FY 1987 program reflects completion in FY 1986 of several R&D projects and the continuation of the sampling and characterization of wastes from emerging technologies.

The coal fuel cycle presents a problem in that it produces a significant amount of waste. Some of these coal wastes are continually released to the environment as ash and leachate and the resulting effects are not fully understood. While the volume of residues from conventional technologies and those projected from emerging technologies pose a logistic problem, one of the most important unanswered questions centers around the degree of environmental hazard these residues represent. Research should provide answers which will aid the conventional coal consuming technologies to grow and accelerate the acceptance of new technologies. The three principal questions being addressed by the Waste Management program are:

- o What, if any, are the potentially hazardous materials which are contained in and released from the wastes?;
- o How are they released to the environment, or how do they occur?; and
- o At what rate?

The answer to the first question will identify those wastes which may pose a hazard, but it will not be the deciding factor. The answers to the questions of how potentially harmful emissions occur, and at what rate, are the key to predicting the environmental impact of fossil energy waste disposal and developing control strategies. The principal thrust of the waste management program is directed towards:

- Sampling and characterization and basic data
- Energy recovery from coal preparation (cleaning) wastes.

Research into these areas will provide data for management of fossil energy wastes.

The proposed FY 1987 program will continue to build upon the waste management technology data base developed to date. Completion of the organics characterization of conventional fossil fuel combustion wastes during FY 1986 will permit limited work on sampling and characterization of the organics and inorganics of wastes from emerging fossil fuel use technologies. The sampling and characterization will continue to provide an understanding of waste characteristics and the physical, chemical and biological processes that release potentially harmful materials into the environment.

Anticipated FY 1987 accomplishments include:

- Continuing multi-year sampling and characterization of organic and inorganic compounds present in solid wastes from advanced coal technologies.
- Completing Phase I R&D for extracting energy from coal preparation wastes.
- Completing absorption and degradation studies of polynuclear (PAH) compounds in the soil.

FTE Staffing Request

Direct FTE's are funded by this budget activity and include Federal personnel directly engaged in in-house research at the Energy Technology Centers. Although all indirect FTE's are funded in the Program Direction and Management Support budget activity, those who support the planning, management, and contract technical direction functions for this activity are included here in order to provide a clearer indication of the total Federal workforce supporting this activity.

DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
CONTROL TECHNOLOGY AND COAL PREPARATION
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Coal Preparation	Continued low rank coal hot water drying. ($450)	Completed testing of hot water drying PDU and low rank coal fine coal cleaning. ($96)	No activity. ($0)
	Continued research on Gravimelt and microwave chemical coal cleaning processes. ($340)	Completed testing of Gravimelt and microwave 20 lb/hr bench scale reactors. ($1,922)	Complete design of pre-proof-of-concept Gravimelt chemical coal cleaning system. ($1,000)
	No activity. ($0)	Issued PRDA to identify and investigate advanced concepts for chemically modified coals. ($2,286)	Continue investigation of advanced concepts for chemically modified coals. ($1,300)
	Initiated joint DOE/EPRI advanced coal cleaning program. ($3,500)	Continued joint DOE/EPRI advanced physical coal cleaning development and test program with installation and test of two advanced concepts. ($538)	Continue joint DOE/EPRI advanced coal cleaning development and test program. ($1,000)
	Initiated research on microbial desulfurization of coal. ($200)	Identified candidate microbes and techniques for removal of organic sulfur from coal. ($673)	Continue research to optimize techniques for microbial removal of organic sulfur from coal. ($1,000)
	Continued research activities at Southern Illinois Univ. ($980)	Completed research activities at Southern Illinois Univ. ($1,434)	No activity. ($0)
	Continued coal cleaning research at Ames National Laboratory. ($980)	Completed coal cleaning research activities at Ames National Laboratory. ($1,070)	No activity. ($0)
	No activity. ($0)	Completed research on microbubble flotation technology. ($717)	No activity. ($0)

CONTROL TECHNOLOGY AND COAL PREPARATION (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Coal Preparation (cont'd)	Funds appropriated for a laboratory scale demonstration of purged carbon were approved for deferral by Congress. ($983)	Funds deferred in FY 1985 were used to offset FY 1986 appropriation requirements. ($0)	No activity. ($0)
	Continued efforts on ultrasonic comminution and dewatering. ($250)	Completed research on ultrasonic comminution and fine coal dewatering. ($480)	No activity. ($0)
	Initiated efforts on advanced physical fine coal cleaning concepts. ($1,282)	Completed contracted efforts on advanced physical fine coal cleaning concepts. ($1,484)	No activity. ($0)
	Continued research on ultrafine coal characterization and process economics. ($450)	Continued research on the chemical and physical characterization of ultrafine coal and process economics. ($456)	Continue ultrafine coal characterization and process economics. ($500)
	Initiated research on the beneficiation of chemically modified coals. ($600)	Continued research on the beneficiation of chemically modified coals and initiated advanced concepts for chemical coal cleaning, and organic sulfur chemistry. ($480)	Continue in-house research on chemical coal cleaning, and fundamental organic sulfur chemistry. ($500)
	Continued in-house research on advanced physical coal cleaning concepts. ($950)	Continued research on advanced physical coal cleaning concepts such as selective agglomeration, ultrafine coal flotation, electrostatically enhanced magnetic separation and true heavy liquid cycloning. ($1,080)	Continue laboratory scale research on advanced physical cleaning concepts. ($1,143)
Flue Gas Cleanup	Completed pressure hydrated lime injection evaluation; continued emissions characterization. ($485)	Completed bench scale development of sorbents for boiler injection application. Work was performed by UNDERC. ($439)	No activity. ($0)

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CONTROL TECHNOLOGY AND COAL PREPARATION (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Flue Gas Cleanup (cont'd)	Initiated PRDA for evaluation of acid rain precursor control technology at proof-of-concept scale. ($4,667)	Continued FY 85 PRDA and POC test and evaluation for acid rain precursor control technology process candidates. ($1,797)	Complete PoC test and evaluation for low temperature dry hydrate and dolomitic lime slurry in-duct injection for acid rain precursor control technology process candidates. ($3,390)
	Continued research on advanced NOx/SO2 chemistry and advanced concept development. ($4,540)	Continued research on advanced NOx/SO2 chemistry and advanced concept development. ($4,456)	Continue research on advanced NOx/SO2 chemistry and bench scale advanced concept development. ($2,341)
	Initiated testing of E-Beam/ ammonia PDU. ($185)	Completed E-Beam/ammonia POC test and evaluation. Work was performed by Ebara Corp. in Ind. ($47)	No activity. ($0)
	Issued RFP for scaleup of fluidized bed copper oxide process to POC level. ($900)	Continued fluidized bed copper oxide POC test and evaluation. ($2,778)	Continue fluidized bed copper oxide POC test and evaluation. ($1,810)
	Completed test and evaluation of E-Beam/lime spray dryer PDU.($113)	No activity. ($0)	No activity. ($0)
	Completed bench scale evaluation of the five PRDA processes. ($425)	No activity. ($0)	No activity. ($0)
	Funds appropriated for a utility scale test of the Glo-Klen combustion catalyst were approved for deferral by Congress. ($1,967)	Funds deferred in FY 85 were used to offset FY 86 appropriation requirements. ($0)	No activity. ($0)
	Initiated Glo-Klen testing. ($150 of prior year funds)	Completed testing of the Glo-Klen catalysts at lab scale using the same prior year funds.	No activity. ($0)
	Continued research on fine particle control technology. ($100 of prior year funds)	Completed fine particulate control technology research. ($288)	No activity. ($0)

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CONTROL TECHNOLOGY AND COAL PREPARATION (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Flue Gas Cleanup (cont'd)	Initiated evaluation of combined NOx/SOx control in a dry scrubber process. ($1,229)	Completed dry scrubber evaluation at ANL in Ill. ($1,147)	No activity. ($0)
Gas Stream Cleanup	Continued determination of key critical component problems for sub-pilot scale PFBC cleanup techniques for removal of alkalies and particulates. ($1,400)	Completed subpilot testing at NYU of candidate PFBC particulate removal devices; terminated program definition phase for selecting cleanup devices for PFBC system integration POC testing. ($1,457)	No activity. ($0)
	Completed bench scale tests for alkali control and removal from PFBC combustors for acceptable turbine operation. ($605)	Terminated sub-pilot scale alkali control tests for PFBC power systems. Work was performed at ANL in Ill., and Westinghouse in Pa; initiated alkali combustion chemistry research. ($240)	Continue alkali combustion chemistry research. Work will be performed by MRI in Kansas. ($350)
	Conducted in-depth economic/systems analysis for PFBC alkali and particulate removal devices. ($239)	Continued economic/systems analysis for PFBC particle control systems. Work was performed by Gilbert Commonwealth in Pa. ($75 of prior year funds)	No activity. ($0)
	Conducted lab/bench scale coal-fired combustor tests of selected advanced PFBC particle cleanup systems to determine concept feasibility. ($540)	Terminated tests of second generation advanced PFBC particulate cleanup concepts. ($384)	No activity. ($0)
	No activity. ($0)	Initiated direct coal fired turbine studies PRDA. ($1,625)	Complete PRDA for direct coal fired turbine studies. ($1,234 of FY 1986 funds)

CONTROL TECHNOLOGY AND COAL PREPARATION (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Gas Stream Cleanup (cont'd)	Continued field tests of selected concepts for control of trace system contaminant species through combustor modification techniques. ($75 of prior year funds)	Continued process modification control R&D for trace contaminants. ($539)	Continue process modification R&D for trace contaminants. ($75)
	Initiated SO2 control tests for direct-fired turbine power systems. ($700)	Determined concept feasibility of SO2 removal with selected sorbents. ($288)	Continue R&D for sulfur removal with selected sorbents. ($788)
	No activity. ($0)	Initiated direct-fired turbines particulate removal tests. ($192)	Continue process modification R&D for direct-fired turbine. ($1,000)
	Continued testing zinc ferrite desulfurization process on another type of gasifier. ($410)	Completed zinc ferrite sorbent testing at sub-pilot scale. Work performed by KRW in Pa. ($1,081)	No activity. ($0)
	Initiated on-line coal gasification tests of selected particulate and sulfur removal devices for gasifier/turbine combined cycles. ($1,607)	Completed on-line tests for selected particulate and sulfur removal devices including novel high temperature and pressure desulfurization processes, ceramic bag filter and electrostatic precipitator, and laboratory investigation of acoustic agglomeration. Continued on-line coal gasifier tests of remaining selected particulate and sulfur removal devices. ($883)	Complete on-line tests of remaining selected particulate and sulfur removal devices for turbine combined cycle. ($600)
	Conducted contaminant control tests for MCFC (soot, particulate trace metals). ($1,397)	Continued test and evaluation of soot, particulate control, and trace contaminants. ($331)	Continue test and evaluation of soot, particulate control, and trace contaminants. ($100)

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CONTROL TECHNOLOGY AND COAL PREPARATION (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Gas Stream Cleanup (cont'd)	No activity. ($0)	Initiated experimental research of novel processes to treat regeneration tail gases from high temperature desulfurization of coal gases. ($90 of prior year funds)	No activity. ($0)
	Conducted instrumentation and research on contaminant chemical and physical properties. ($150)	Continued research to resolve specific instrumentation problems; continued investigation of chemical and physical properties of contaminants. ($85)	Continue basic research for physical and chemical cleanup for gasifier PFB and direct coal-fired turbines including instrumentation and control. ($926)
	Completed investigation and evaluation of process modification control methods for prevention of acid rain precursor formation. ($300)	No activity. ($0)	No activity. ($0)
Waste Management	Continued sampling and characterization of wastes from emerging technologies. ($531)	Continued sampling and characterization of organic and inorganic species in solid wastes produced by emerging technologies. ($504 including $115 for Ames Natl. Lab)	Continue sampling and characterization and data acquisition of organic and inorganic compounds present in solid wastes and in their leachates. ($195)
	Continued waste management R&D of low rank coal wastes. ($290)	Completed initial phase of waste management laboratory R&D of coal wastes. ($77)	No activity. ($0)
	Continued study of polynuclear aromatics. ($75)	Continued adsorption and degradation studies of polynuclear (PAH) compounds in the soil. ($75 of prior year funds)	Complete adsorption and degradation studies of polynuclear (PAH) compounds in the soil. ($75 of prior year funds)

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CONTROL TECHNOLOGY AND COAL PREPARATION (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Waste Management (cont'd)	Continued coal waste disposal site soil attenuation studies (field study). ($626)	Continued identification and establishment of multi-sites for monitoring leachate and behavior of solid wastes generated by advanced coal-based technology projects initiated in the latter half of FY 1985. ($192)	No activity. ($0)
	Continued R&D for extracting energy from coal preparation wastes. ($90 of prior year funds)	Continued R&D for extracting energy from coal preparation wastes. ($298)	Complete Phase I R&D for extracting energy from coal preparation wastes. ($129)
	Updated MIS data base. ($320)	Continued MIS data base activity. ($106)	No activity. ($0)
	Completed investigation and development of waste disposal options. ($125)	No activity. ($0)	No activity. ($0)

DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
LEAD TABLE
COAL
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(Tabular dollars in thousands. Narrative material in whole dollars.)

	FY 1985 Appropriation	FY 1986 1/ Appropriation	FY 1987 Base	FY 1987 Request	Request vs Base
Advanced research and technology development (FE)					
Direct utilization:					
Operating expenses	$ 9,990	$11,262	$11,262	$ 9,415	$ -1,847
Subtotal	9,990	11,262	11,262	9,415	-1,847
Materials and components:					
Materials					
Operating expenses	7,733	6,899	6,899	5,860	-1,039
Components					
Operating expenses	1,452	2,735	2,735	1,593	-1,142
Subtotal	9,185	9,634	9,634	7,453	-2,181
Technology crosscut:					
Environmental activities					
Operating expenses	2,459	2,345	2,345	2,200	-145
Technical and economic analyses					
Operating expenses	2,360	2,151	2,151	2,000	-151
Technology base synthesis					
Operating expenses	885	779	779	800	+21
Instrumentation, control, and diagnostics					
Operating expenses	1,500	2,056	2,056	1,356	-700
Subtotal	7,204	7,331	7,331	6,356	-975
University coal research:					
Operating expenses	4,425	5,622	5,622	4,000	-1,622
Subtotal	4,425	5,622	5,622	4,000	-1,622
Total					
Operating expenses	30,804	33,849	33,849	27,224	-6,625
Advanced research and technology development	$30,804 2/	$33,849	$33,849	$27,224	$ -6,625
Staffing Total FTE's: Direct	57	32	32	15	-17
Indirect	29	22	22	19	-3

1/ Adjustments to the FY 1986 Appropriation are shown on the table on the following page.

2/ Liquefaction processes ($5.511M) and gasification processes ($3.364M) transferred from this activity to the Coal Liquefaction activity and Surface Coal Gasification activity, respectively.

Authorization: Section 4, P.L. 93-577
Section 301, P.L. 95-91

Department of Energy

FY 1987 Congressional Budget Request

Adjustments to FY 1986 Appropriations

	FY 1986 Confer.	General Reduction	Gramm-Rudman-Hollings	Total
Advanced Research and Technology Development (TE)				
Direct Utilization				
Operating Expenses	$11,780	$-58	$-460	$11,262
Materials and Components:				
Materials				
Operating Expenses	2,861	-14	-282	2,565
Components				
Operating Expenses	7,216	-35	-112	7,069
Subtotal	10,077	-49	-394	9,634
Technology crosscut:				
Environmental activities				
Operating Expenses	2,453	-12	-96	2,345
Technical and Economic Analyses				
Operating Expenses	2,250	-11	-88	2,151
Technology Base Synthesis				
Operating Expenses	815	-4	-32	779
Instrumentation, Control, and Diagnosis				
Operating Expenses	2,150	-10	-84	2,056
Subtotal	7,668	-37	-300	7,331
University Coal Research				
Operating Expenses	5,884	-32	-230	5,622
Subtotal, Advanced Research and Technology Development	$35,409	$-176	$-1,384	$33,849
General Reduction:				
Operating Expenses	-176	176	-	-
Total, Advanced Research and Technology Development	$35,233	-	$-1,384	$33,849
Operating Expenses	35,233	-	-1,384	33,849

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Summary of Changes

FY 1986 Appropriation enacted	$33,849
Program increases and decreases:	
Direct Utilization	
o Decrease research in: deposition mechanisms; in-situ contaminant control; atmospheric and pressurized combustion phenomena; sulfur removal processes; molten carbonate and solid oxide electrochemistry; and fundamental beneficiation mechanisms	-1,847
Materials and Components	
o Materials - Reduce research in the areas of corrosion and erosion, alloy development, and structural ceramics development and characterization	-1,039
o Components - Decrease R&D on solids transport and novel component concepts	-1,142
Subtotal	-2,181
Technology Crosscut	
o Environmental activities - Decrease in the capability to conduct independent reviews and quality control of analytical tools and data bases under the Interagency Task Force on Acid Precipitation (ITFAP) program along with a decrease in analyses associated with air quality and water quality	-145
o Technical and economic analyses - Reduction in capability to improve the quality of analytic tools and data to perform technical/economic analyses of issues associated with potential fossil fuel utilization for the industrial and utility sectors	-151
o Technology base synthesis - Continue studies to identify fossil energy-related research needs and to order research priorities. Also, continue support to develop international cooperative research programs and technology exchanges	+21
o Instrumentation, control, and diagnostics - Reduce support for development of new measurement and control techniques to measure chemical and physical properties of process streams	-700
Subtotal	-975
University Coal Research	
o Decrease to about 20 the number of new university coal research projects relating to coal science, environmental science, surface science, organic and inorganic chemistry of coal constituents, and the mechanisms and kinetics of chemical reactions important to gasification, liquefaction and combustion	-1,622
FY 1987 budget request	$27,224

Advanced research and technology development:

Goals/Objectives:

The Advanced Research and Technology Development (AR&TD) Program is directed toward the scientific and technical areas that underlie the development of all fossil energy technologies. The program has been reoriented to respond to the critical fundamental research needs identified in recent years by the Energy Research Advisory Board, various Fossil Energy Research Working Groups, the National Academy of Sciences, and others. To assure continuation of the high quality research, program relevance, and scientific merit, a peer review of the AR&TD program was conducted in early 1984. The review was coordinated by DOE's Office of Energy Research and involved project assessments by experts from industry, National Laboratories, and academia.

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The AR&TD coal science program focuses on mission-oriented fundamental research to increase understanding of the mechanisms of direct coal combustion. The AR&TD program also includes generic studies of materials and components and investigations of instrumentation concepts in environments associated with advanced coal technologies. Fundamental research at the Energy Technology Centers, National Laboratories, universities, and industrial and not-for-profit laboratories helps extend the scientific and engineering knowledge base and provides ideas for new processes and possible technical breakthroughs in coal conversion and utilization.

An important goal in each AR&TD subprogram is the discovery of new concepts and the small scale testing of these concepts for scientific and technical feasibility. AR&TD differs from the Fossil Energy line programs; the latter have an end-item technology development orientation. The AR&TD mission is to pursue generic research in support of all Fossil Energy coal line programs. It addresses fundamental scientific and engineering problems that are barriers to Fossil Energy technological goals. The AR&TD program is unique in that it is directed to specific scientific and technical areas which are closely connected to long-range Fossil Energy objectives. In contrast, DOE's Office of Energy Research principally supports basic research not specific to fossil energy technologies.

AR&TD research spans the spectrum of coal-related technologies of interest to the Fossil Energy line programs. The goals of this research are to:

- o Increase the understanding of the fundamental principles that govern utilization processes;
- o Understand the behavior of materials in coal-based systems;
- o Conduct crosscutting research that benefits all coal technologies; and
- o Provide a focus for supporting novel ideas related to fossil energy technologies.

Specifically, the objectives of AR&TD activities are to:

- o Provide a focal point for governmental involvement in fundamental research on coal.
- o Expand existing knowledge base, understanding, and verified modeling capability covering those chemical, physical, and thermodynamic phenomena critical to the design and performance of improved coal combustion systems.
- o Explore innovative high risk, high potential payoff concepts for coal conversion and utilization.
- o Provide a better understanding of the behavior of materials, components and instrumentation in environments associated with those expected to be found in advanced coal combustion and utilization systems.
- o Continue the exploration of new materials, catalysts and electrolytes for fuel cell systems.
- o Assess and coordinate environmental support for Fossil Energy programs.
- o Coordinate the planning and development of a balanced Fossil Energy program.
- o Coordinate, assess and plan Fossil Energy advanced research, including international and environmental activities.

To accomplish these objectives, the program is divided into the following functional areas: direct utilization, materials and components, university coal research, and technology crosscut. Technical direction is also provided for the advanced research activities in gasification and liquefaction.

Research is carried out by the Energy Technology Centers, the National Laboratories, universities, and industrial and not-for-profit laboratories.

FY 1986 Accomplishments:

In FY 1986, the AR&TD Program continued to conduct mission oriented fundamental research in the activities listed below:

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- Continued research on the determination of the physical and chemical properties of uncombusted coal-based fuels and solid, liquid and gaseous products produced during the combustion process.
- Continued research in combustion science, including investigation of fuel injection, atomization, devolatilization and pyrolysis, volatile and char oxidation; the formation and transformation during combustion of pollutants (e.g., ash, alkali, sulfur and nitrogen compounds) and mass and energy transport, including support of the IEA-sponsored coal combustion science initiative.
- Continued studies on deposition mechanisms before, during, and after combustion, with particular emphasis on ash, mineral matter, and alkalies in conventional and fluidized bed boiler, diesel engine, and gas turbine applications.
- Continued research on processes relevant to coal beneficiation (e.g., comminution, extraction of sulfur, mineral matter, nitrogen and alkalies) and the control and removal of pollutants during and after combustion.
- Continued generic electro-chemistry research pertinent to molten carbonate and solid oxide fuel cells.
- Conducted research on high temperature corrosion, erosion, joining and mechanical properties of heat exchanger materials; reduced the level of effort on corrosion, erosion, and mechanical properties of structural ceramics and refractories.
- Continued the assessment of unique seal techniques for severe process conditions and development of flow control concepts for hot multiphase gas.
- Increased support for fundamental research in solids transport.
- Conducted analyses associated with air and water quality, solid waste disposal, toxic substances, and supported occupational health and safety compliance services.
- Continued research conducted by the Interagency Task Force on Acid Precipitation (ITFAP).
- Continued funding of studies which support multi-year planning and Fossil Energy strategy and program formulation, technical/economic assessment studies that crosscut a number of Fossil Energy programs, and support of IEA/Coal Research Service.
- Continued analyses, studies and technical evaluations in support of FE international activities and provided seed funding for new initiatives and identified advanced research needs.
- Explored unique methods for measurement of multiphase flow parameters such as velocity, solids content, and viscosity; and for identifying chemical species by advanced methods such as plasma spectrographic techniques.
- Initiated approximately 30 new university projects relating to coal science, environmental science, surface science, organic and inorganic chemistry of coal constituents and the mechanisms and kinetics of chemical reactions to gasification, liquefaction and combustion.
- Initiated a cooperative agreement with the University of North Dakota Energy Research Corp. (UNDERC).

Budget Request By Subactivity:	FY 1986 Approp.	FY 1987 Request	Net Change
Direct utilization	$11,262	$ 9,415	$ -1,847

This AR&TD subprogram conducts fundamental research to investigate and understand the basic underlying scientific principles that govern the behavior of coal utilization processes. Technology areas that benefit from this knowledge include: boiler, gas turbine and diesel engine applications employing conventional, fluidized bed and advanced combustion techniques; coal preparation and beneficiation, including coal-liquid and pulverized coal characteristics; fuel cells; hot gas cleanup for fuel cells, integrated gasifier and pressurized fluidized bed combined cycle power plants; flue gas cleanup of sulfur, particulate, nitrogen, alkali and trace element pollutants; and waste utilization. Activities are directed toward elucidation of the fundamental physical, chemical, biological and thermodynamic mechanisms inherent in coal utilization science, and include feasibility studies of advanced and novel concepts. A combination of experimental and theoretical research is employed in five major areas:

Properties - Determination of the physical and chemical properties of uncombusted coal, coal-based fuels, and the solid, liquid, and gaseous products produced during the combustion process.

Combustion Science - Study of the combustion process as it pertains to the technologies of interest in atmospheric, pressurized, and internal combustion systems, including investigation of fuel injection, atomization, devolatilization and pyrolysis, volatile and char oxidation; the formation and transformation of pollutants (e.g. ash, sulfur and nitrogen compounds); and mass and energy transport.

Deposition Mechanisms - Study of the mechanisms before, during, and after combustion, with particular emphasis on ash, mineral matter, and alkalies in conventional and fluidized bed boiler, diesel engine, and gas turbine applications.

Separation Processes - Study of the processes relevant to coal beneficiation (e.g. comminution, extraction of sulfur, mineral matter, nitrogen and alkalies) and the control and removal of pollutants during and after combustion.

Electrochemistry - Research on electrolytes, materials, catalysts and advanced fabrication techniques to develop more efficient and durable electrode structures and modeling and analysis capability pertinent to fuel cells.

Major emphasis in FY 1986 was concentrated on the following:

- o Research on combustion kinetics and pyrolysis.
- o Study of SO_x/NO_x formation in boilers.
- o Study of novel means for pollutant (particulates, alkali, sulfur, nitrogen) removal in boilers.
- o Research on coal preparation and beneficiation.
- o Investigation of coal-liquid slurry rheology and atomization, particularly for non-utility advanced applications.
- o Research on fluidized bed particle efflux and tube and wall wastage.
- o Investigation of pressurized combustion and deposition mechanisms in advanced combustion concepts.
- o Research on novel sorbents for hot gas sulfur compound separation.
- o Electrochemistry and catalysis research concerning molten carbonate and solid oxide fuel cells.

The FY 1987 request of $9,415,000 represents a decrease of $1,847,000 from the FY 1986 funding level. At this decreased level, research in the area of properties will be continued at a level comparable with the FY 1986 effort. Research in combustion science, deposition mechanisms, separation processes, and electrochemistry will be continued, but at a reduced level of effort.

In FY 1987, efforts will include:

- o Research on advanced pressurized and internal combustion processes applicable to gas turbines and diesel engines, concentrating on atomization and droplet disruption of coal-liquid mixtures, and mechanisms and kinetics of tar, ash and char production, devolatilization, and oxidation within the temperature and pressure profiles of these applications.
- o Research on atmospheric combustion processes, concentrating on the mechanisms and kinetics of devolatilization and pyrolysis, the effects of beneficiation, radiative and convective heat transfer, and global char kinetics. This includes studies of low-rank coals and the effects of moisture, particle size, ash composition and alkali concentrations upon them.
- o Research on advanced in-situ contaminant control of sulfur, nitrogen, ash and alkali compounds during the combustion process. This includes examination of specialized sorbents and the mechanisms and kinetics of pollutant formation and transformation, mass, momentum and energy transfer.
- o Research on slagging and fouling from bituminous coals and increased research on slagging and fouling of low-rank coals, with emphasis on the mechanisms of deposition and the effects of beneficiation, atomization, particle size, and coal composition.

- Research on novel/advanced processes for post-combustion emission control and innovative methods to control alkalies, nitrogen and sulfur oxides and ash at the atmospheric pressures of boiler flue gas cleanup systems and the elevated pressures of gas turbines.
- Completion of a study on fluidized bed tube and wall wastage, concentrating on multi-phase particle efflux and erosion mechanisms.
- Research on electrochemistry and catalysis of advanced fuel cells.
- Research on coal surface chemistry and the behavior of liquid suspensions as it affects physical, chemical and biological means of separation of mineral matter, sulfur and nitrogen compounds in the preparation of clean coal fuels.

	FY 1986 Approp.	FY 1987 Request	Net Change
Materials and components	$ 9,634	$ 7,453	$ -2,181
Materials	$ 6,899	$ 5,860	$ -1,039

The AR&TD materials studies are directed toward understanding the behavior of materials used in coal-based energy systems. Conditions in coal liquefaction, gasification, combustion, and oil shale processing systems are considerably different from those in conventional energy systems. These advanced technologies encounter unusually high rates of sulfidation corrosion which is aggravated by erosion caused by solid matter. Similarly, high hydrogen partial pressures at higher than normal temperatures, in conjunction with sulfur species, present new aspects of hydrogen attack which are not well understood and must be studied. The significance of these materials problems is confirmed by the premature pilot plant shutdowns caused by material failures.

Typical projected accomplishments in FY 1986 include the following:

- Comparison of non-destructive evaluation techniques for structural ceramics.
- Initial assessment of the effect of processing parameters and microstructures on mechanical properties of ceramic-ceramic composites for fossil applications.
- Continuation of research on joining of iron nickel-aluminides.
- Continuation of a mechanistic study of the effects of deposits on corrosion of heat exchanger alloys.

Past AR&TD research was primarily directed toward identification of materials which functioned best in specific coal conversion environments. Current research is directed toward understanding the mechanisms of deterioration in situations common to a variety of fossil fuel applications. At the FY 1987 request level, all areas of materials research will be somewhat reduced. Specific activities in FY 1987 include:

- Assess fracture and corrosion mechanisms in structural ceramics for coal applications.
- Determine mechanisms of corrosion and corrosion erosion in fossil environments.
- Collection and dissemination of information to the scientific community.

Components	$ 2,735	$ 1,593	$ -1,142

The goal of components research is to enhance industry's capability to produce reliable, efficient, versatile, and economic plants; it will be achieved through the study and development of advanced components concepts with potential for incorporation into operating systems and through development of fundamental data on process stream properties necessary for component design.

The design of coal-based synthetic fuel facilities and advanced utilization systems (process development units, pilot and commercial plants) is based on experience gained in conventional fossil fueled power plants and petrochemical facilities. The developers and operators of these new facilities experience excessive start-up periods, costly

down-times, and expensive backup systems to achieve acceptable periods of operation because of component reliability.

The primary problem for components in fossil energy systems is the presence of solid materials in process streams. These solids increase wear, erosion, and fouling in pumps, valves, compressors, heat exchangers, filters, and other components.

The typical accomplishments expected in FY 1986 include:

- Evaluation of the feasibility of a novel slurry pressure let-down device for use as a two-phase flow regulator, and initiation of three-phase tests.
- Identification of mechanisms of wear in slurry seals.

In FY 1987, the program will continue to have two thrusts: the development of novel components concepts; and solids transport. Four novel components projects will continue in FY 1987: two assessing unique seal techniques for severe process conditions; and two evaluating slurry flow control devices.

The solids transport program was initiated in FY 1984. It consists of two major parts: research on bulk flow, which examines the fundamentals of solids, particularly coal, moving in chutes, hoppers and systems which feed storage bins and reactor vessels; and research on multiphase flow, which examines the fundamentals of flow situations in fossil conversion and utilization systems in which the solids are combined with liquids, or gases, or both. The ultimate objective of these basic studies, which involve modeling with experimental verification, is to improve the basis of components design.

In FY 1985 and 1986, implementation was begun on the recommendations of the planning workshop held during 1984. In FY 1987, the level of effort in this program will be reduced. The program focus will include:

- Research to understand better the mechanisms of discrete particle flow.
- Studies of the stability and rheology of suspension systems such as those occurring in coal-liquid mixtures.
- Modeling and scaleup and design of suspension transport systems such as pneumatic coal slurry transport of solids.

	FY 1986 Approp.	FY 1987 Request	Net Change
Technology crosscut	$ 7,331	$ 6,356	$ -975
Environmental activities	$ 2,345	$ 2,200	$ -145

The FY 1987 request will provide funding for studies supporting Fossil Energy policy development and refinement, R&D assessment and compliance overview in the areas of environment, safety and health (ES&H). The principal analyses supporting policy development will focus on environmental issues related to fossil fuel use and the impacts on fossil energy resources and programs. This environmental effort will provide a policy and management framework for ensuring that ES&H considerations are properly integrated into Fossil Energy programs, and that projects and programs are conducted in compliance with ES&H laws and regulations. The requested funding will ensure that most ES&H compliance activities will be continued, and that the capability to conduct analyses of ES&H issues pertaining to air quality, and solid waste will be maintained. Of specific concern are the ES&H issues associated with emissions, and solid waste residuals. Also included in this request is funding for the research conducted by Task Group B (Manmade Sources) of the Interagency Task Force on Acid Precipitation (ITFAP). The Office of Fossil Energy chairs Task Group B.

Major functions of the environmental activities area include the 1) overview of programs to assure that facilities and projects comply with environment, safety and health

legislation and regulations and 2) studies and analyses of broad issues that have the potential for affecting fossil energy resources and programs. These broad issues could arise from potential legislative and regulatory actions associated with laws such as the Clean Water Act, Resource and Conservation and Recovery Act, Toxic Substances Control Act, and the Clean Air Act. Studies and analyses are conducted with the objective of contributing to the formulation of Fossil Energy positions that are supported by technically accurate data. These studies are an important component of the Fossil Energy policy/planning process, which supports the formulation of Departmental positions and helps to identify new research areas with potentially high payoff. In conducting research in support of Task Group B and ITFAP, emphasis is placed upon studies that support the development of improved data on the nature and level of current and future emissions, particularly for presently uncharacterized species from fossil energy combustion and conversion processes. Accurate inventories of emissions of air pollutants relative to acid deposition, and quality assurance reviews of analytical procedures and uncertainties in emissions data bases by Task Group B are essential to the ability of ITFAP to produce critical assessments. The completion and subsequent revisions to the assessments are an important part of developing a rational, cost effective strategy for dealing with the acid rain problem.

Activities in FY 1986 include:

- o Continue analysis of issues associated with air and water quality, solid waste disposal.
- o Continue efforts on emissions modeling and data for the Interagency Task Force on Acid Precipitation.
- o Continue to support occupational health and safety compliance services.

Similar activities will be continued in 1987 with some change in emphasis.

- o Continuation of support of Interagency Task Force on Acid Precipitation. Limited effort will be focused on quality assurance of analytical tools and data bases.
- o Continuation of support on occupational health and safety compliance services.
- o Continuation of analysis of issues associated with air and water quality and solid waste disposal relative to impacts on fossil energy resources and technologies.

	FY 1986 Approp.	FY 1987 Request	Net Change
Technical and economic analyses	$ 2,151	$ 2,000	$ -151

The FY 1987 request will fund studies supporting multi-year planning and FE strategy and program formulation that are part of the continuing evaluation of Fossil Energy R&D priorities. Technical/economic analyses are needed to support Fossil Energy strategy and program development. These analyses provide a framework to ensure that Fossil Energy priorities are in accord with National goals and strategies, Department of Energy policies, and other important criteria relating to the appropriate federal R&D role. These funds will be utilized to conduct contract studies that crosscut a number of FE programs, such as the future replacement costs of liquid and gaseous fuels from conventional and nonconventional sources, and the analysis of various factors that may impact long-term fossil fuel use and the introduction of new fossil technology in the industrial, utility, residential/commercial and transportation sectors. It is expected that a number of important strategic planning issues requiring further analysis will be identified as a result of FY 1986 energy sector analysis efforts associated with the Interagency Task Force on Acid Precipitation and other major ongoing energy deliberations.

This subprogram also supports the International Energy Agency's London-based Coal Research Service (CRS). The CRS was formerly the Economic Assessment Service and the Technical Information Service which merged in 1984 in order to realize cost savings. It is a multilateral international project, jointly funded by 15 cooperating countries.

The functions of the CRS are the same as its predecessors, namely the consideration of the economics of future coal supply and use and the collection and dissemination of information related to all aspects of coal technology.

It is anticipated that activities supported in FY 1987 will be similar to activities in FY 1986 with modest reductions in scope due to lower funding, and include:

- o Support multi-year planning and Fossil Energy strategy and program formulation studies.
- o Fund technical/economic assessment studies that focus on major end-uses (e.g., transportation and industrial fuels) and thus crosscut a number of Fossil Energy programs.
- o Support IEA/Coal Research Service studies, which will include studies in the areas of coal transportation, utilization and associated environmental issues.

	FY 1986 Approp.	FY 1987 Request	Net Change
Technology base synthesis	$ 779	$ 800	$ +21

This AR&TD subprogram provides overall integration and coordination of research and exploratory development activities that otherwise are often fragmented. It also provides an effective means of applying advances in one technology to the solution of problems in another. The coordination of Fossil Energy international activities is also supported by these funds.

Activities in FY 1986 focused on several important areas:

- o Analyses, studies and technical evaluations in support of the International Energy Agency and bilateral/multinational agreements and activities in which the Fossil Energy Program is involved.
- o Continuation or initiation of several advanced research projects of a multidisciplinary nature that are not easily accommodated by the current program due to their crosscutting nature.
- o Identification of advanced research needs.

The FY 1987 request of $800,000 provides for crosscutting assessments and international coordination of Fossil Energy research. In addition, seed funding is also provided for novel, fundamental research projects.

Specifically, the following activities are expected in FY 1987:

- o Development of an advanced research and technology development project fact sheet system which will provide a basis for program control, program integration and enable management to monitor more closely program execution.
- o Initiate studies designed to assure that research being conducted in the Advanced Research and Technology Development (AR&TD) area is correctly focused and that it addresses the research needs of Fossil Energy technologies. This would include identifying areas where research gaps exist, identifying areas of overlapping research, if any, and serving as a basis for further integration of the AR&TD program.
- o Conduct analyses, studies and technical evaluations in support of multilateral and bilateral international agreement activities in which the Fossil Energy program is involved.
- o Continuation or initiation of several advanced research projects of a multidisciplinary nature that are not easily accommodated by the current program due to their crosscutting nature.

	FY 1986 Approp.	FY 1987 Request	Net Change
Instrumentation, control, and diagnostics	$ 2,056	$ 1,356	$ -700

Measurement of process parameters in fossil energy systems is essential to determination of the nature of a process stream and control of the process. Many critical parameters cannot yet be quantified so accurate design, measurement, and control are not possible. The basic cause is that process streams are multiphase, that is, they may contain solids, liquids, and gases in combinations that are not generally encountered in other systems. Research funded by the AR&TD instrumentation subprogram is directed toward the identification of techniques of measurement rather than development of functioning commercial instruments.

The projected accomplishments in FY 1986 are:

- Preliminary identification of the limits of high resolution capillary column supercritical fluid chromotography for fossil liquids.
- Continued research on non-intrusive methods of measuring multiphase process stream parameters.
- Continued research on a variety of techniques to measure chemical species in process streams.

At the reduced level of funding in FY 1987, the instrumentation, control and diagnostics program will concentrate on the development of techniques to identify chemical species peculiar to fossil systems. The use of laser-induced fluorescence spectroscopy to identify polynuclear aromatic hydrocarbons is an example of such a technique. The development of new instrumentation techniques is critical to the operation and control of advanced fossil systems.

University coal research	$ 5,622	$ 4,000	$ -1,622

The objective of the University Coal Research (UCR) Program is to support meritorious university projects in fundamental goal-oriented research related to all aspects of coal conversion and utilization that are of interest to the Fossil Energy program. However, unlike university projects supported by other Fossil Energy program elements, the University Coal Research projects are different in one or more of the following ways. University Coal Research projects:

- tend to be longer range and more fundamental research, directed toward improved understanding rather than process improvement.
- tend to be on crosscutting topics -- e.g., surface reactivity of coal powders, chemistry of mercury in coal hydrogenation and waste treatment, weathering effects on coal structure and reactivity, etc.
- include student training as one of the project objectives.
- are chosen from the top 10% of proposals received. Additional meritorious proposals have been offered to and accepted by other Fossil Energy programs.

The following accomplishments are representative of progress expected in FY 1986:

- Development of improved nuclear magnetic resonance (NMR) techniques for investigating coal structure to determine the types of carbon-carbon and carbon-hydrogen bonds in various coals.
- Investigation of fundamental processes involved in preparation of superclean coal by flotation of finely ground coals with bubbles/microbubbles of air, nitrogen, or carbon dioxide.
- Determination of reactions of coal during supercritical extraction with water and organic solvents in the presence of hydrogen and catalysts.

In FY 1987, $4,000,000 is requested, compared with $5,622,000 appropriated in FY 1986. The FY 1987 request will allow for initiation of about 20 university projects compared with about 30 projects in FY 1986. The new grants will be awarded competitively through a Program Solicitation inviting proposals for fundamental research on coal in the areas of primary interest to the Fossil Energy Program. Topics of research will be selected with advice from mainline programs, and will include the following broad areas: coal science, surface science, mechanisms and kinetics, thermodynamics, solids transport and environmental science. Collaboration between university and industrial researchers will be encouraged.

FTE Staffing Request

Direct FTE's are funded by this budget activity and include Federal personnel directly engaged in in-house research at the Energy Technology Centers. Although all indirect FTE's are funded in the Program Direction and Management Support budget activity, those who support the planning, management, and contract technical direction functions for this activity are included here in order to provide a clearer indication of the total Federal workforce supporting this activity.

DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
ADVANCED RESEARCH AND TECHNOLOGY DEVELOPMENT
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Direct Utilization	Continued scientific investigations of the properties of coals and coal-based fuels, and their products relevant to combustion. ($1,296)	Performed research on the determination of the physical and chemical properties of uncombusted coal-based fuels, and of solid, liquid and gaseous products produced during the combustion process. ($769)	Continue research on the determination of physical and chemical properties of uncombusted coals and combustion products. ($950)
	Continued investigations of coal combustion typical of boilers and heaters, atmospheric and pressurized fluidized bed combustors, diesel engines and gas turbines; continued IEA-sponsored coal combustion science initiative. ($3,270)	Performed research in combustion science, including investigation of fuel injection, atomization, devolatilization, pyrolysis, and oxidation; the formation and transformation of pollutants (e.g., ash, sulfur and nitrogen compounds) and mass and energy transport; supported IEA-sponsored coal combustion science initiative. ($5,131)	Reduce research on coal combustion science. Continue support of IEA coal combustion science program. ($4,643)
	Continued investigations of erosion, corrosion and desposition resulting from the effects of ash and mineral matter, alkalies, and sulfur and nitrogen compounds. ($1,528)	Conducted studies on deposition mechanisms before, during, and after combustion, with particular emphasis on ash, mineral matter, and alkalies in conventional and fluidized bed boiler, diesel engine, and gas turbine applications. ($2,353)	Reduce research on deposition mechanisms and erosion caused by mineral matter in atmospheric, internal combustion, and pressurized environments. ($1,845)

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ADVANCED RESEARCH AND TECHNOLOGY DEVELOPMENT (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Direct Utilization (continued)	Continued investigations of separations mechanisms before, during and after combustion, including comminution, beneficiation, and separation of pollutants, alkalies and trace impurities from hot and cold gas streams. ($1,004)	Performed research on processes relevant to coal beneficiation (e.g., comminution, extraction of sulfur, mineral matter, nitrogen and alkalies) and the control and removal of pollutants during and after combustion. ($1,793)	Reduce research on separation mechanisms relevant to the coal fuel cycle, from coal beneficiation to the removal of environmentally deleterious products of combustion. ($1,127)
	Continued generic electro-chemistry research pertinent to molten carbonate and solid oxide fuel cells; concluded research on generic phosphoric acid fuel cell studies. ($1,909) Funds appropriated for private sector phosphoric acid fuel cell study were approved for deferral by Congress. ($983)	Performed generic electro-chemistry research and conducted fundamental studies pertinent to molten carbonate and solid oxide fuel cells. ($1,216) The funds deferred in FY 1985 were used to offset FY 1986 appropriation requirements. ($0)	Reduce generic electrochemistry research and research on fundamental aspects of molten carbonate and solid oxide fuel cells. ($850)
Materials	Continued research on high temperature corrosion, mechanisms of fracture in structural ceramics composites, mechanisms of deterioration of refractory linings in gasifiers and boilers, hydrogen effects and erosion and wear; funded research at INEL on strategic materials to complement Bureau of Mines programs. ($7,320) Funds appropriated to restore the materials program to the FY 1984 level were approved for deferral by Congress. ($413)	Reduced research on high temperature corrosion, erosion, joining and mechanical properties of heat exchanger materials; maintained a consistent level of effort on corrosion, erosion, and mechanical properties of structural ceramics and refractories. ($6,899) The funds deferred in FY 1985 were used to offset FY 1986 appropriation requirements. ($0)	Reduce mechanistic research necessary to allow development and use of new corrosion and erosion resistant alloys, ceramics and refractories for use in coal conversion and utilization systems. ($5,860)

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ADVANCED RESEARCH AND TECHNOLOGY DEVELOPMENT (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Components	Conducted research to develop specialized components needed in fossil energy systems. ($972)	Continued assessment of unique seal techniques for severe process conditions and development of flow control concepts for hot multi-phase gas. ($1,139)	Fund four projects: two on novel component concepts to mitigate erosion and wear in seals; and two on slurry flow control devices. ($650)
	Continued research in bulk solids flow; initiated fundamental research in area of solids transport. ($480)	Increased fundamental research in solids transport. ($1,596)	Reduce fundamental research at national labs and PETC on bulk flow modeling, solids-liquid rheology, and dense phase solids-gas flow; eliminate support for university research in solids transport. ($943)
Environmental Activities	Conducted analysis associated with air and water quality, solid waste disposal, toxic substances; supported occupational health and safety compliance services. ($1,709)	Conducted analysis associated with air and water quality, solid waste disposal, toxic substances; supported occupational health and safety compliance services. ($1,625)	Continue, at reduced level, analyses of issues associated with air and water quality, solid waste disposal, and toxic substances; continue support of occupational health and safety compliance services. ($1,550)
	Continued research conducted by Interagency Task Force on Acid Precipitation (ITFAP). ($750)	Continued research conducted by ITFAP. ($720)	Continue research conducted under ITFAP with reduced emphasis on quality assurance of data and analytical tools. ($650)
Technical and Economic Analyses	Funded studies which support multi-year planning and Fossil Energy (FE) strategy and program formulation, technical/economic assessment studies that crosscut a number of FE programs, and support of IEA/Coal Reserach Service. ($2,360)	Continued funding studies which support multi-year planning and FE strategy and program formulation, technical/economic assessment studies that crosscut a number of FE programs, and support of IEA/Coal Research Service. ($2,151)	Continue, at lower level, funding studies which support multi-year planning and FE strategy and program formulation, technical/economic assessment studies that crosscut a number of FE programs, and support of IEA/Coal Research Service. ($2,000)

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ADVANCED RESEARCH AND TECHNOLOGY DEVELOPMENT (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Technology Base Synthesis	Continued support for international activities, crosscutting research, and technical assessment studies. ($885)	Continued analyses, studies and technical evaluations in support of FE international activities; provided seed funding for new initiatives; identified advanced research needs. ($779)	Continue analyses and studies to integrate and coordinate research and exploratory development activities, to identify advanced research needs, to support international collaborative research activities in FE, and to provide seed funding for new advanced research initiatives. ($800)
Instrumentation, Control & Diagnostics	Continued development of methods for measuring chemical species. and completed optical port design. ($1,500)	Explored unique methods for measuring multiphase flow parameters such as velocity, solids content, and viscosity; and for identifying chemical species such as plasma spectrographic techniques. ($2,056)	Reduce research on unique methods for measuring multiphase flow parameters such as velocity, solids content, and viscosity; and for identifying chemical species such as plasma spectrographic techniques. ($1,356)
University Coal Research	Initiated 28 new university projects. ($4,425)	Initiated approximately 30 new university projects relating to coal science, environmental science, surface science, organic and inorganic chemistry of coal constituents and the mechanisms and kinetics of chemical reactions to gasification, liquefaction and combustion. ($5,622)	Initiate approximately 20 new university projects relating to coal science, environmental science, surface science, organic and inorganic chemistry of coal constituents and the mechanisms and kinetics of chemical reactions to gasification, liquefaction and combustion; encourage collaboration between university and industrial researchers. ($4,000)

DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
LEAD TABLE
COAL
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(Tabular dollars in thousands. Narrative material in whole dollars.)

	FY 1985 Appropriation	FY 1986[1/] Appropriation	FY 1987 Base	FY 1987 Request	Request vs Base
Coal liquefaction (FE)					
Advanced research:					
Operating expenses	$ 5,511[2/]	$ 5,157	$ 5,157	$ 2,620	$ -2,537
Subtotal	5,511	5,157	5,157	2,620	-2,537
Indirect liquefaction:					
Operating expenses	7,179	9,325	9,325	2,539	-6,786
Subtotal	7,179	9,325	9,325	2,539	-6,786
Direct liquefaction:					
Operating expenses	12,716	12,807	12,807	2,996	-9,811
Subtotal	12,716	12,807	12,807	2,996	-9,811
Support studies/engineering evaluations:					
Operating expenses	5,704	4,331	4,331	992	-3,339
Subtotal	5,704	4,331	4,331	992	-3,339
Total					
Operating expenses	31,110	31,620	31,620	9,147	-22,473
Coal liquefaction	$31,110	$31,620	$31,620	$ 9,147	$-22,473
Staffing Total FTE's: Direct	63	72	72	51	-21
Indirect	22	27	27	22	-5

1/ Adjustments to the FY 1986 Appropriation are shown on the table on the following page.

2/ Liquefaction processes ($5.511M) transferred to this activity from the Advanced Research and Technology Development activity.

Authorization: Section 4, P.L. 93-577
Section 301, P.L. 95-91

Department of Energy

FY 1987 Congressional Budget Request

Adjustments to FY 1986 Appropriations

	FY 1986 Confer.	General Reduction	Gramm-Rudman-Hollings	Total
Coal Liquefaction (FE)				
Advanced Research				
Operating Expenses	$5,396	$ -28	$-211	$5,157
Indirect Liquefaction				
Operating Expenses	9,757	-51	-381	9,325
Direct Liquefaction				
Operating Expenses	13,399	-69	-523	13,199
Support Studies/Engineering Evaluations				
Operating Expenses	4,531	-27	-177	4,331
Subtotal, Coal Liquefaction	33,083	-171	-1,292	31,620
General Reduction:				
Operating Expenses	-171	171	-	-
Total, Coal Liquefaction (FE)	$32,912	-	$-1,292	$31,620
Operating Expenses	32,912	-	1,292	31,620
Capital Equipment				
Construction				

Summary of Changes

FY 1986 Appropriation enacted	$31,620
Program increases and decreases:	
Advanced Research	
o Research will be limited to work conducted at the Pittsburgh Energy Technology Center, the National Institute for Petroleum and Energy Research, and National Laboratories	-2,537
Indirect Liquefaction	
o Conduct research on catalysts and reactor systems at PETC. Eliminate university and reduce cost shared process oriented industrial research	-1,983
o Complete operations of the liquid phase methanol PDU at LaPorte, Texas	-4,803
Subtotal	-6,786
Direct Liquefaction	
o Complete operations of the Direct Coal Liquefaction Research facility at Wilsonville, Alabama	-6,140
o Continue bench scale process research only on existing contracts which will be completed in FY 1987	-2,352
o Restrict laboratory scale investigation of advanced process concepts to PETC in house research	-1,319
Subtotal	-9,811
Support Studies/Engineering Evaluations	
o Complete health effects and biomedical studies	-950
o Complete instrument and component research and research guidance studies	-1,488
o Complete data base management activities	-665
o Reduce laboratory research	-236
Subtotal	-3,339
FY 1987 budget request	$ 9,147

Coal liquefaction:

Program Summary

The FY 1987 budget request for the coal liquefaction technology base totals $9,147,000. The FY 1987 request supports fundamental and applied process research conducted primarily at the energy technology centers, National Labs and cost shared with industrial contractors.

Goals/Objectives:

The Coal Liquefaction program is structured to support the strategic objective established for FE "to increase the effective resource base for premium gas and liquid fuels through enchanced resource recovery and/or production of liquid and gaseous fuel analogs from coal, shale, and tar sands." The specific objective of the Coal Liquefaction program is to continue to add to the information base which supports development by the private sector of economical processes to convert U.S. coals to environmentally and technically acceptable liquid fuels. The program supports long term, potentially high payoff, basic and applied research and development.

Synthetic liquid fuels are an essential part of an energy scenario which provides the U.S. with the means, when required, to reduce reliance on imported petroleum, to have an

answer as absolute supplies of petroleum eventually diminish and to increase the national security of energy supply. Coal is by far the largest fossil energy resource in the U.S. and preparation for its use as a longer term source of liquid fuels is essential as part of the U.S. energy strategy. Coal liquefaction technology, when combined with existing petroleum refining technology, will be able to provide direct replacement products for petroleum derived liquid fuels for heating and transportation. Research and development leading to innovative improvements in the present state-of-the-art will be necessary to improve the market potential of these technologies. With high uncertainty in supplies and prices in upcoming decades in the international petroleum market, the private sector will not undertake the long range, high risk R&D required to develop these improvements.

As the name suggests, direct liquefaction converts the complex organic chemical structures found in coal directly to liquid components by hydrogenation. This requires elevated temperatures and pressures and is almost always carried out in a liquid phase system containing powdered coal and a process derived pasting solvent. In coal/oil co-processing the pasting solvent is a petroleum fraction and therefore is also a feedstock to the process. This reduces or eliminates the need for recycle oil resulting in a much higher throughput for the same size plant, providing substantial reduction in capital cost per unit of output. The major potential advantages of direct liquefaction are high thermal efficiency, and high liquid product yield. The principal disadvantages stem from the severe operating conditions involving coal slurries and the high degree of integration found among process steps. The products have generally aromatic structures (in the chemical sense) because of the structures found in coal and this makes high quality motor gasoline a major product of direct liquefaction. The initial products may contain significant quantities of heteroatoms from the coal (most serious are nitrogen and oxygen) which must be removed by careful process adjustments or by known refining/upgrading treatments. Similarily, heavy aromatic compounds that are known to be biologically active may be present in direct liquefaction products, but these, too, can be reduced or eliminated by process adjustments or further processing.

The production of liquid fuels by indirect liquefaction involves coal gasification to produce a mixture of $CO + H_2$ (synthesis gas) followed by the catalytic conversion of the synthesis gas to liquids.[2] The liquefaction (or synthesis) step is generally less complex from an engineering perspective than direct liquefaction but the overall process is generally less efficient and less selective to fuel grade liquids. The liquefaction step does not have to deal with coal ash and the liquid products which are free of sulfur and nitrogen contamination. The chemical structure of the products can favor production of diesel fuels as a major product. Biological activity and potential health effects are not likely to be a problem with the products of indirect liquid synthesis; the principal waste issues will be related to the synthesis gas production.

Inspection of the advantages and disadvantages of the two routes to liquid fuels from coal indicates that neither approach is clearly superior or preferable for development. The best products from each technology are different enough to suggest that both types of processes may be expected to coexist in any large-scale liquid synfuel industry. For these reasons a significant effort has been ongoing in each area.

In FY 1987, the Coal Liquefaction program continues to support basic and applied research to develop the scientific and engineering knowledge base with which industry can bring economically competitive and environmentally acceptable advanced technology for the manufacture of synthetic liquid fuels from coal into the marketplace when needed.

Specific objectives are to:

- Develop a better understanding of coal liquefaction processes, coal chemistry and related process engineering sciences.
- Expand the knowledge base on the physical, chemical and thermodynamic properties of fossil fuel liquids.

- Identify advanced, innovative improvements over state of the art processes for coal liquefaction which can utilize the entire U.S. coal base.
- Develop improvements in product selectivity and quality, and net yield of liquid products per ton of coal.
- Improve plant operability, on-stream factors, and process operating conditions to reduce capital and operating costs.
- Utilize synthesis gas produced by modern gasifiers from U.S. coals with a molar hydrogen to carbon monoxide ratio below one.
- Continue research on coal-oil co-processing using various coals, different oil stocks and operating conditions to provide data on the following improvements:
  - Cost savings possible through the simultaneous upgrading of coal and heavy oil.
  - Infrastructure advantages through introduction of coal into refining processes in an evolutionary fashion.

FY 1986 Accomplishments:

Advanced Research
- Continued exploration of novel coal liquefaction process concepts, including biological approaches.
- Continued research to obtain a better understanding of coal liquefaction and reactions of synthesis gas.
- Continued research on application of new and evolving concepts in catalysis to coal liquefaction.
- Continued research on the physical, chemical and thermodynamic properties of fossil fuel liquids.

Indirect Liquefaction
- Completed operation and data acquisition from methanol to gasoline (MTG) pilot plant in collaboration with West Germany using prior funding.
- Continued to emphasize laboratory research to provide data which will broaden the knowledge of catalyst and reaction systems.
- Completed research on liquid phase methanol synthesis with operation of and data acquisition from the PDU at La Porte, TX.

Direct Liquefaction
- Continued laboratory and bench scale research on co-processing heavy oil and coal.
- Continued bench scale research on the close coupled direct catalytic process.
- Completed proof-of-concept testing of staged liquefaction at Wilsonville.
- Continued exploratory studies on new process technology including in-house studies.

Support Studies/Engineering Evaluations
- Completed biomedical studies with emphasis on products from co-processing coal and residual petroleum and from advanced staged liquefaction processes.
- Completed research guidance studies and instrument and component research.
- Completed liquefaction data base management activities. Focused on analysis and consolidation of data, including some modeling.
- Continued laboratory research in support of process studies. Emphasis on solvent characterization, reaction kinetics and catalyst characterization and deactivation mechanisms.

Budget Request By Subactivity:	FY 1986 Approp.	FY 1987 Request	Net Change
Advanced research	$ 5,157	$ 2,620	$ -2,537

The main focus of this program is small scale, fundamental phenomenological studies in coal liquefaction. Research areas include catalysis and kinetics and mechanisms of indirect liquefaction. Other studies leading to advanced liquefaction concepts include hydroextraction of coal, the effects of specific solvent components on kinetics and liquefaction products, and biological approaches to coal liquefaction.

In addition, this program consolidates and augments scientific research on the physical, chemical, and thermodynamic (PCT) properties of fossil fuel liquids. It is responsive to the often identified need to improve the fundamental understanding and existing information base on liquid properties related to synthetic fuels processing. The ultimate goal is to develop simple predictive techniques for identifying PCT properties of fossil fuel liquids relevant to synthetic fuel technologies.

The Advanced Research (AR) liquefaction activity is significantly different from the other line liquefaction subprograms in the following ways:

More fundamental - The AR program supports research on correlation of coal properties with reactivity for liquefaction. Examples include nuclear magnetic resonance (NMR) probing of coal and coal-solvent interactions; investigation of the structure of low rank coal; acquisition of physical, chemical, and thermodynamic (PCT) data on coal liquids; and the Penn State Coal Sample Bank. The other subprograms have little or no such activities. Information from this research aids the other line subprograms by providing fundamental information and data to assist in improvement of coal liquefaction processes.

Higher risk and more exploratory - The AR program supports high risk approaches to coal liquefaction such as electrochemical and biological methods, and the use of supercritical extraction and unconventional solvents. Characteristically, the economics of these approaches are not known. AR approaches that show promise may be expected to "graduate" to the other line subprograms.

Smaller scale - AR projects are invariably conducted on a small scale, not involving continuous units and not above a laboratory scale.

Typical projected accomplishments in FY 1986 include the following:

- o Completion of initial evaluation of several microorganisms for biological liquefaction of coal.
- o Investigation of the synthesis and evaluation of novel, highly active catalytic materials based on hydrous oxide support materials that offer unusual versatility for catalyst formulation.
- o Elucidation of chemical pathways for hydrogen consumption and redistribution under different coal liquefaction conditions.
- o Quantification of structural features of low rank coal.
- o Selection and maintenance of a group of 50 coal samples representative of U.S. coal resources to provide high quality coal samples and related compositional data to coal researchers.
- o Measurement of accurate PCT data on organic sulfur and nitrogen compounds that are models for substances found in coal derived liquids.

In FY 1987, $2,620,000 is requested, a decrease of $2,537,000 from the FY 1986 funding level. Research will be continued at the Pittsburgh Energy Technology Center, the National Institute for Petroleum and Energy Research, and National Laboratories. The research efforts will continue on the properties of coal liquids and reaction mechanisms during the coal liquefaction process. Limited industrial and university research on novel catalytic, biological and other coal liquefaction processes will continue. Research will also continue on the physical, chemical and thermodynamic properties of fossil fuel liquids.

	FY 1986 Approp.	FY 1987 Request	Net Change
Indirect liquefaction	$ 9,325	$ 2,539	$ -6,786

The FY 1987 funding request for Indirect Liquefaction is $2,539,000, a decrease of $6,786,000 from the FY 1986 funding level. This decrease can be attributed to new

program policy guidelines directing Fossil Energy R&D efforts away from proof-of-concept and industrial research and towards in-house research studies. Specific changes to this program are the elimination of the LaPorte liquid phase methanol PDU project and reorientation of catalyst and reactor studies to in-house work at PETC while continuing certain cost shared industrial research projects.

Indirect liquefaction is a technology which can produce by catalytic synthesis a variety of liquid fuels, including gasoline, distillate fuels and furnace oils, and alcohols, from gaseous feedstocks. These products are suitable for virtually all U.S. market sectors including the transportation, residential, industrial/commercial and utility markets. The DOE program has as its primary objectives the following:

- o achieving more selective and economic liquid fuel yields, and
- o achieving better utilization of coal-derived (low hydrogen content) gas feedstocks.

To accomplish these objectives, major emphasis is placed on improved reactor systems and advanced catalysts because these contribute most to the yields, economics, and feed flexibility of indirect liquefaction processes.

A commercial (Fischer-Tropsch) process was first conceived during the 1930's to convert low carbon monoxide content gas to a broad range of liquids. While evolutionary improvements have been made, the commercial process still has inherent limitations. A major limitation is the production of large quantities of by-product chemicals for which there is no significant market in the U.S.

The broad based research program now in place is effectively investigating the technology for converting the high carbon monoxide content (low ratio H_2/CO) synthesis gas produced by the modern gasifiers, including those marketed by U.S. industry, to quality fuels. Current research is emphasizing homogeneous catalysts and heterogeneous catalysts with shape selectivity and bi-functional capabilities. The new technology eventually will selectively produce the desired, high quality fuels without the extensive downstream processing required in the past. Reactor designs which are necessary to provide close control of the reaction temperature and recover the exothermic heat of reaction are a part of the program.

The indirect liquefaction program in FY 1986 emphasized the study of advanced catalysts and chemical reactions. The methanol to gasoline (MTG) pilot plant also completed operations in West Germany using FY 1984 funds. This facility is supported equally by DOE, the West German government, and industry. The MTG plant demonstrated the versatility of the basic process concept by producing olefins from methanol. The olefins can be converted to high quality diesel fuel in an existing process, thus providing an efficient route for the production of diesel fuel, as well as gasoline, from methanol. PETC continued basic studies of the direct synthesis of liquid fuels including catalyst composition, preparation, activation techniques and slurry phase reactions. A number of laboratory scale research projects were also underway with industrial and university organizations to investigate catalysts and reaction mechanisms in order to improve product selectivity and yields. Reactor designs including gas fluidized three phase systems were under development.

Research to investigate the concept of producing methanol in a slurry phase reaction from carbon monoxide rich synthesis gas continued. This liquid phase methanol concept could provide electric utilities a valuable option at advanced, combined cycle power plants. Some of the coal derived synthesis gas will be converted to liquid methanol to be available as a fuel for peak electricity generation. The converted gas will be a turbine fuel for base load use.

In FY 1987, the indirect liquefaction subprogram will continue laboratory research to provide data for better understanding catalyst and reaction systems which permit the direct utilization of coal derived synthesis gas to produce high quality gasoline, distillate or alcohol fuels selectively. This research will be conducted at PETC and at some industrial facilities under existing contracts.

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	FY 1986 Approp.	FY 1987 Request	Net Change
Direct liquefaction	$12,807	$ 2,996	$ -9,811

This subactivity has supported the development of innovative improvements that have the potential for yielding significant cost reductions in direct liquefaction technologies. Based on previous research, feasible improvements have been identified and the Direct Liquefaction subprogram has conducted research to exploit these improvements by evaluating process concepts that offer potential for lower hydrogen consumption, higher liquid yields, higher quality products, and greater flexibility in feed coal and product slate selection. Elements of the program have included catalyst development and evaluation, laboratory and integrated bench scale process research, and proof-of-concept evaluations at a 6 ton per day scale at Wilsonville, Alabama. In FY 1987 the program will be reoriented to an in-house technology base program conducted at Pittsburgh Energy Technology Center. Several existing industrial research contracts ending in FY 1987 will be completed.

Process development activities for near term direct liquefaction technologies are considered technically ready for larger scale demonstration by the private sector. Proof-of-concept testing of the staged liquefaction process was completed at Wilsonville in FY 1986. A substantial data base on this newer process concept is now available over a range of conditions with both bituminous and subbituminous coals. No funds are requested for Wilsonville in FY 1987.

Based on a competitive multiyear award two cost-shared industrial projects have been evaluating the co-processing of coal with heavy oil since October 1984. The objective is to evaluate the technical feasibility and establish a process data base on this concept. Co-processing is a new concept in coal liquefaction that offers the potential for substantial cost reduction and for acceleration of the introduction of coal-derived fuels into the marketplace by utilizing to a greater extent existing petroleum refinery technology and equipment. The work completed to date has established the technical feasibility of the process. Screening work completed in FY 1985 showed that high coal conversions and good liquid yields can be obtained using U.S. bituminous and subbituminous coals with a number of U.S., Canadian, and other imported crude oils. Preliminary continuous bench scale studies in FY 1986 will establish operating performance over a range of operating conditions. In FY 1987 each project will be completed with additional bench scale studies and preparation of a preliminary conceptual design.

Bench scale testing of a close coupled catalytic direct liquefaction process was continued in FY 1986 to develop improvements in process performance and economics. In FY 1987 this project will be completed with further bench scale research and preparation of a preliminary conceptual design.

A number of laboratory activities in the technology base and screening test area being carried out under contracts with industry and universities will be completed in FY 1986 and no additional funds are requested for this activity.

Funds are being requested to continue in-house, technology base research at PETC. The PETC projects are focused on new direct liquefaction process concepts and analytical studies to improve understanding of coal liquefaction reaction mechanisms and catalysts. In FY 1987, at least three areas will be pursued: (1) studies of coal conversion catalysts; (2) co-processing of coal with heavy oil; and (3) use of non-conventional chemical systems in Direct Liquefaction. If available, evaluations of technology data from the Japanese will also be conducted.

In FY 1986 an international agreement for R&D research between DOE and Italy was initiated which includes a laboratory scale project in liquefaction. This project will continue in FY 1987.

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	FY 1986 Approp.	FY 1987 Request	Net Change
Support studies/engineering evaluations	$ 4,331	$ 992	$ -3,339

This subactivity supports the overall coal liquefaction program and includes studies applicable to all of the technologies under development. The studies have included independent technical status reviews for research guidance, instrument and component research, environmental and technological R&D, and generic laboratory research supportive of process research. Data management has also been included with emphasis on capture of the information from the previous large scale projects and modeling studies to make data available and useful to industry. In FY 1987 this subactivity will be reoriented to a technology base program in liquefaction research conducted at Sandia National Laboratory. An industrial contract in technology base research will also be continued.

Certain fractions of coal-derived liquids have produced toxic effects in laboratory animals. A technology oriented health effects (biomedical) test program is underway which is coordinated with the health effects program of the Office of Energy Research. Undesirable components are characterized and efforts made to evaluate techniques to reduce toxic materials in a manner compatible with liquefaction processes. Previous work has provided assessment of material from two-stage liquefaction processes and initial tests on co-processing products. Long term skin painting studies continued to evaluate various levels of hydrotreatment to destroy bioactive substances. Data developed in the program can be used by industry to identify process configurations or operating conditions needed to minimize production of toxic substances. This activity will be completed in FY 1986.

Research and development has been needed to help improve critical mechanical components and controls identified as problem areas for pilot and commercial scale operations. Past projects provided significant advances in slurry pump operation and slurry metering instrumentation. In FY 1986, work was continued in deashing feed monitoring instrumentation and solvent quality enhancement and measurements. Funds are requested for this work in FY 1987 to complete one industrial research project on instrumentation.

In FY 1986, efforts were continued on generic laboratory research in support of the process research activities, such as experimental studies on catalyst deactivation mechanisms, process solvent characterization, and reaction kinetics and mechanisms. In FY 1987, work will continue on developing improved understanding of kinetic effects of importance to advanced liquefaction processes along with work on solvent and catalyst characterization techniques.

In prior years, work has been supported in liquefaction information management activities. The objective of this project has been to develop and implement an information management system to collect, evaluate and disseminate liquefaction research and development data from past large scale operations. In FY 1985, data acquisition activities were completed for the major liquefaction project activities (SRC-II, H-Coal, EDS). In FY 1986, efforts were focused on further analysis and consolidation of this data as well as adding data from advanced process research activities to the information base. This project will be completed in FY 1986.

FTE Staffing Request

Direct FTE's are funded by this budget activity and include Federal personnel directly engaged in in-house research at the Energy Technology Centers. Although all indirect FTE's are funded in the Program Direction and Management Support budget activity, those who support the planning, management, and contract technical direction functions for this activity are included here in order to provide a clearer indication of the total Federal workforce supporting this activity.

DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
COAL LIQUEFACTION
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Advanced Research	Continued exploration of innovative coal liquefaction process concepts. ($1,250)	Continued exploration of innovative coal liquefaction process concepts. ($1,201)	Reduce exploratory efforts on novel coal liquefaction processes. ($200)
	Continued research to obtain a better understanding of coal liquefaction, reactions of synthesis gas, effects of mineral matter in coal and properties of coal liquids. ($2,263)	Continued research to obtain a better understanding of coal liquefaction, reactions of synthesis gas, effects of mineral matter in coal and properties of coal liquids. ($2,118)	Continue research to improve the understanding of coal liquefaction including properties of coal, reaction mechanisms, utilization of hydrogen, and properties of coal liquids. ($1,120)
	Initiated research on biological approaches to coal liquefaction. ($170)	Continued research on biological approaches to coal liquefaction. ($192)	Continue research on biological approaches to coal liquefaction. ($100)
	Initiated research on application of new and evolving concepts in catalysis (such as immobilized homogeneous catalysts and cluster catalysts) to coal liquefaction. ($550)	Continued research on application of new and evolving concepts in catalysis to coal liquefaction. ($577)	Continue research on novel catalytic approaches to coal liquefaction. ($450)
	Expanded research on the physical, chemical and thermodynamic properties of fossil fuel liquids. ($1,278)	Continued research on the physical, chemical and thermodynamic properties of fossil fuel liquids. ($1,069)	Continue research on the physical, chemical and thermodynamic properties of fossil fuel liquids. ($750)
Indirect Liquefaction	Continued operation and data acquisition from MTG pilot plant in collaboration with W. Germany. (prior year funds)	Completed operation and data acquisition from MTG pilot plant in collaboration with W. Germany. (prior year funds)	No activity. ($0)

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COAL LIQUEFACTION (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Indirect Liquefaction (continued)	Continued operation of the liquid phase methanol PDU in LaPorte, Texas. ($3,234)	Completed operation of the liquid phase methanol PDU in LaPorte, TX. ($4,803)	No activity. ($0)
	Obtained data from bench scale catalyst and slurry phase reaction studies. ($3,945)	Continued to emphasize laboratory catalyst research, provide data base and support limited industrial research on advanced process concepts. ($4,522)	Continue catalyst research, study reaction mechanisms and more promising process concepts at PETC and with industry. ($2,539)
Direct Liquefaction	Continued laboratory scale investigations of advanced process concepts and limited industrial bench scale process research. ($7,316)	Continued laboratory scale investigation of advanced process concepts and limited industrial bench scale research. ($6,667)	Continue in-house research of advanced process concepts at PETC while completing existing bench scale industrial projects. ($2,996)
	Continued operation of coal liquefaction research facility in Wilsonville, Alabama. ($5,400)	Completed operation of the coal liquefaction research facility at Wilsonville, Alabama. ($6,140)	No activity. ($0)
Support Studies/Engineering Evaluations	Continued biomedical studies with emphasis on staged liquefaction products and chemical upgrading of products. ($1,180)	Completed biomedical studies with emphasis on products from coprocessing coal and residual petroleum. ($950)	No activity. ($0)
	Continued research guidance studies and instrument and component research. Emphasis on research requirements for advanced process concepts. ($2,852)	Completed research guidance studies and instrument and component research. ($1,525)	Complete one existing industrial instrument research project. ($37)
	Continued liquefaction data base management activities; completed data base acquisition from major project activities. ($787)	Completed liquefaction data base management activities with focus on analysis and consolidation of data. ($665)	No activity. ($0)

COAL LIQUEFACTION (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activit'es During FY 1987
Support Studies/Engineering Evaluations (cont'd)	Continued laboratory research in support of advanced process research; generated data on coal dissolution reaction kinetics and mechanisms. ($885)	Continued laboratory research in support of advanced process research activities with emphasis on solvent quality characterization, reaction kinetics and catalyst deactivation. ($1,191)	Reduce activity to technology base research and an existing industrial research project. ($955)

DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
LEAD TABLE
COAL
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(Tabular dollars in thousands. Narrative material in whole dollars.)

	FY 1985 Appropriation	FY 1986 1/ Appropriation	FY 1987 Base	FY 1987 Request	Request vs Base
Combustion systems (FE)					
Atmospheric fluidized bed combustion:					
Operating expenses	$18,737	$16,572	$16,572	$ 1,590	$-14,982
Subtotal	18,737	16,572	16,572	1,590	-14,982
Pressurized fluidized bed combustion:					
Operating expenses	2,458	5,061	5,061	3,686	-1,375
Subtotal	2,458	5,061	5,061	3,686	-1,375
Advanced combustion technology:					
Operating expenses	1,967	3,409	3,409	1,882	-1,527
Subtotal	1,967	3,409	3,409	1,882	-1,527
Alternative fuels:					
Operating expenses	6,930	4,071	4,071	2,011	-2,060
Subtotal	6,930	4,071	4,071	2,011	-2,060
Total					
Operating expenses	30,092	29,113	29,113	9,169	-19,944
Combustion systems	$30,092	$29,113	$29,113	$ 9,169	$-19,944
Staffing Total FTE's: Direct	34	24	24	20	-4
Indirect	24	24	24	19	-5

1/ Adjustments to the FY 1986 Appropriation are shown on the table on the following page.

Authorization: Section 4, P.L. 93-577
Section 301, P.L. 95-91

Department of Energy

FY 1987 Congressional Budget Request

Adjustments to FY 1986 Appropriations

	FY 1986 Confer.	General Reduction	Gramm-Rudman-Hollings	Total
Combustion Systems (FE)				
Atmospheric Fluidized Bed Combustion				
Operating Expenses	$17,341	$ -92	$-677	$16,572
Pressurized Fluidized Bed Combustion				
Operating Expenses	5,296	-28	-207	5,061
Advanced Combustion Technology				
Operating Expenses	3,569	-21	-139	3,382
Alternative Fuels				
Operating Expenses	4,257	-20	-166	4,071
Subtotal, Combustion Systems..	$30,463	$-161	$-1,189	$29,113
General Reduction:				
Operating Expenses	-161	161	-	-
Construction				
Total, General Reductions				
Total, Combustion Systems (FE)	$30,302	-	$-1,189	$29,113
Operating Expenses	30,302	-	-1,189	29,113

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Summary of Changes

FY 1986 Appropriation enacted	$ 29,113
Program increases and decreases:	
Atmospheric Fluidized Bed Combustion	
o Complete funding of TVA demonstration project in FY 1986	-14,334
o Complete advanced concept bench scale testing	-762
o Continue special application PRDA to be issued in FY 1986	+299
o Discontinue coal characterization (LRC) studies and economic design follow-on. Continue in-house research on particle motion flow, erosion, bed internals and heat transfer surfaces	-185
Subtotal	-14,982
Pressurized Fluidized Bed Combustion	
o Complete cost-shared program with industrial sector for high efficiency advanced PFB concepts following completion of Phase I systems definition studies	-695
o Complete testing of advanced hot gas cleanup devices at New York University and continue test program to obtain data on combustion characterization heat transfer and provide a basis for advanced concept designs	-169
o Complete metals wastage studies on the mechanisms and kinetics of coal/sorbent combustion products, materials survivability, etc., in a PFB environment and terminate experimental testing program to verify laboratory testing	-480
o Reduce in-house research effort on PFB dynamics, data analysis, and engineering/systems analysis	-31
Subtotal	$ -1,375
Advanced Combustion Technology	
o Complete efforts associated with the AVCO advanced slagging retrofit combustor project	-765
o Complete Phase I efforts. Phase II efforts will be initiated at a reduced effort	-255
o Continue in-house activities supportive of generic advanced combustion technology	-74
o Complete funding of the AVCO pulsed combustor project	-433
Subtotal	-1,527
Alternative Fuels	
o Reduced the scope of light industrial/commercial applications PRDA for detailed combustion and fuel handling characterization R&D for CLM/micro-pulverized coal fuels in selected light industrial and commercial furnaces/boilers	-2,060
FY 1987 budget request	$ 9,169

Combustion Systems:

Goals/Objectives:

The goal of the Combustion Systems activity is to increase the contribution and application of the nation's coal resources through the development of acceptable combustion systems and fossil-derived fuels for the marketplace. The programs within the overall Combustion Systems activity are Atmospheric Fluidized Bed, Pressurized Fluidized Bed, Alternative Fuels and Advanced Combustion Technology.

The objective of the AFB program is to broaden the market and utilization of coal by expanding the technology application to the light industrial, commercial/institutional and residential sectors in an economical and environmentally acceptable manner. While there are 19 U.S. manufacturers of AFB's, the units are competitive with oil and gas only in the 150,000 pound of steam per hour sizes and larger. The smaller units installed in the light industrial sector are economically competitive only on a case-by-case basis, i.e., cogeneration, high capacity, supplemental waste fuel, etc. This program will develop generic AFB's for the entire market that compete economically and environmentally with oil and gas.

The Pressurized Fluidized Bed Combustion program objective is to establish the technology which will enable industry to demonstrate and commercialize first entry systems by the early 1990's and to extend the technology by developing data for advanced PFB concepts which provide quantum improvements in system efficiency and substantial reductions in the cost of electricity.

The objective of the Advanced Combustion Technology program is the development of technology that will permit the use of coal in boiler, furnace and heater applications now using oil or natural gas. This would include the retrofit of existing equipment as well as the design of new systems to optimize the use of the new technology developed.

The Alternative Fuels program objective is to establish the technology for light industrial/commercial/residential combustion systems that defines the ability of those systems to technically, economically, environmentally, and socio-aesthetically accommodate coal liquid mixtures and other coal-based fuels as a means of displacing the oil and/or natural gas presently consumed by those systems.

FY 1986 Accomplishments:

Atmospheric Fluidized Bed Combustion
- o Completed operations of the East Stroudsburg and Wilkes-Barre AFB units.
- o Completed economic system studies of advanced concepts and initiated bench scale construction and testing.
- o Completed funding support of the 160 MW TVA demonstration plant.
- o Continued economic studies of critical cost elements, conducted coal characterization studies/burn tests (LRC) and in-house erosion research.
- o Award contracts for special applications PRDA.

Pressurized Fluidized Bed Combustion
- o Continued testing at NYU to obtain data on performance of advanced hot gas cleanup devices.
- o Completed the laboratory experiment program to evaluate erosion/corrosion of PFB materials (in-bed tubes, gas turbine blades).
- o Continued in-house research on data and engineering/system analysis.
- o Initiated a cost shared follow-on effort to test key critical PFB process components, i.e., tube bundle, CWM slurry feeding, hot gas cleanup.
- o Initiated Phase I of cost shared program with industry for advanced PFB systems with improved economic and high efficiency.

Advanced Combustion Technology
- o Completed the Advanced Slagging Combustor project (TRW).
- o Initiated PRDA for coal fired systems for light industrial, commercial/institutional and residential applications.
- o Completed AVCO slagging combustor project including tests on the bench scale unit.
- o Initiated in-house testing on coal fired units with varying air fuel ratios and coal based fuels for emissions characterization and market sector application.
- o Completed AVCO pulsed combustor project.

Alternative Fuels
- Defined the "suitability" and "extent" of continued characterization R&D for specific combustion system configurations for light industrial/commercial and residential boiler/furnace applications of CLM/micro-coal fuels.
- Continued emissions characterization to address effluents/intrusions from CLM use.

Budget Request By Subactivity:	FY 1986 Approp.	FY 1987 Request	Net Change
Atmospheric fluidized bed combustion	$16,572	$ 1,590	$-14,982

The objective of the AFB program is to broaden the market and utilization of coal by expanding the technology application to the light industrial, commercial/institutional and residential sectors in an economical and environmentally acceptable manner. While there are 19 U.S. manufacturers of AFB's, the units are competitive with oil and gas only in the 150,000 pound of steam per hour sizes and larger. The smaller units installed in the light industrial sector are economically competitive only on a case-by-case basis, i.e., cogeneration, high capacity, supplemental waste fuel, etc. This program will develop generic AFB's for the entire market that compete economically and environmentally with oil and gas.

FY 1986 funds were utilized to complete economic systems studies and commence bench scale testing of Advanced Concepts; initiate bench scale designs of Special Applications; continue coal characterization studies/burn tests (LRC); continue economic studies of critical cost elements; continue fluidization research and complete funding support of the TVA 160 MWe demonstration project.

FY 1987 funds will be utilized to complete designs and initiate construction and testing of the most promising of the special application bench scale units and conduct basic in-house research on particle motion flow, erosion, bed internals and heat transfer surfaces.

Pressurized fluidized bed combustion	$ 5,061	$ 3,686	$ -1,375

The pressurized fluidized bed (PFB) combustion program objective is to develop PFB combustion systems that achieve high combustion efficiency and acceptable component durability and reliability while staying within acceptable emission levels. The goal of DOE sponsored activities is to develop PFB scientific and engineering technology data through proof-of-concept to support private sector efforts to demonstrate and commercialize first entry PFB systems for electric power generation in the 1990 time frame.

In FY 1986, the follow-on effort was initiated at the Grimethorpe facility to develop data on combustion efficiency, hot gas cleanup performance, coal water slurry feeding and performance of an updated heat exchanger design. This effort is cost shared with the British National Coal Board, EPRI and United States industry. Additionally, the New York University facility completed operations to obtain data on advanced hot gas cleanup devices. The PFB Advanced Concepts (second generation) program was initiated as a cost-shared effort with industry to develop systems which would offer significant improvements in process economics, reliability, operability and environmental performance.

The FY 1987 funds will be utilized to continue the Grimethorpe follow-on test program on hot gas clean-up, coal water slurry feeding and performance of updated heat exchangers. Efforts at NYU will be continued to evaluate components and design changes to enhance performance and provide the basis for advanced concepts. The METC effort would continue research and development support of the first generation systems development including component evaluation and combustion performance characterization as well as testing of in-house PFB reactors (both hot and cold) to develop paramters that affect particle movement and impingement on heat exchanger surfaces. These efforts are being directed

towards providing the technical data needed by industry to demonstrate first generation combined cycle and turbocharged systems. Additionally, efforts would be completed for the first phase of the Advanced Concepts program which would define the system, identify technology development needs and provide a conceptual design of an advanced PFB electric power plant. Finally, funding will be used for the Advanced Concept program by initiating the second phase efforts for development and testing those key critical process components which would impede commercialization. The Advanced Concepts (Second Generation) program would develop systems which provide a quantum leap in cycle performance (increase efficiency 40% to at least 45%) and substantial reductions in the cost of electricity (reduce cost by at least 20% over conventional coal-fired systems with flue gas desulfurization). The Advanced Concepts program goal is to provide the technology at sufficient scale to enable industry to proceed with pilot scale testing by the mid to late 1990's.

	FY 1986 Approp.	FY 1987 Request	Net Change
Advanced combustion technology	$ 3,409	$ 1,882	$ -1,527

The objective of the Advanced Combustion Technology program is to develop the equipment which will enable existing oil and gas fired boilers, furnaces and process heaters to be retrofitted to burn coal or coal-water mixtures (CWM). This activity is also concerned with the development of new or innovative concepts that will extend the use of coal to smaller commercial and residential markets. The technology development will be applicable to the design of new systems that have the advantage of versatility, environmental cleanliness, and acceptable economics as compared to boilers that utilize conventional direct coal combustion.

In FY 1986, efforts were concentrated on the completion of Phase I of the AVCO Slagging Combustor Project, testing and evaluation of the TRW Slagging Combustor, and a novel pulsed combustor (AVCO) study contract. Conceptual designs and bench scale testing of these innovative combustion concepts were completed. In addition, the light industrial concepts RFP planned for FY 1985 was redirected and combined with an FY 1986 PRDA for commercial and residential concepts. This PRDA resulted in the award of contracts and initiation of Phase I activities (economic and environmental assessments) in FY 1986. At PETC, an in-house effort was initiated in FY 1986 to investigate SO_x and NO_x emissions at varying air/fuel ratios. Studies related to dense phase transport of solids and fuel characterization were performed. Data collected from these activities were organized and archived at PETC.

The FY 1987 request will be used to continue the development of Light Industrial, Commercial, and Residential concepts selected from the FY 1986 PRDA. This will include the design, fabrication, and installation of hardware and some operational testing. Generic in-house activities supportive of these projects will continue at PETC, including fuel characterization efforts and the operation of small size combustors to study NO_x and SO_x emission at varying air/fuel ratios. Dense phase transport studies and the collection and management of data will continue.

Alternative fuels	$ 4,071	$ 2,011	$ -2,060

FY 1987 represents a change in program direction towards a more limited Federal role in support of long-term, high-risk R&D. Therefore, the FY 1986 budget is addressed as a transitional period from the current product development/proof-of-concept philosophy with varying levels of possible Federal support to basic technology research areas with specified maximum percent levels of Federal support.

As a result of this redirection, FY 1986 funds will be used to address the use of CWM fuels in residential applications, and the planned PRDA to examine the use of these fuels in the light industrial/commercial sectors will be reduced in scope to be completed in FY 1987 with FY 1986 funds.

The objective of the alternative fuels activity is to provide the technology development necessary to establish a technology base for retrofitting coal-liquid mixtures to existing oil and gas designed facilities with emphasis on coal in slurry form. The R&D effort will generate a data base sufficient for private sector assessment as to the commercial acceptability of these coal-based fuels for their site specific needs in both retrofit and new capacity applications.

In FY 1986, funds were used for generic combustion characterizations to identify specific light industrial, commercial and residential combustor configurations having a high technical potential for CLM and/or micro-pulverized coal fuel use; and to define a detailed combustion characterization R&D activity for those units adequate to yield the quality and quantity of data required for private sector use and decision.

FY 1987 funds will be used to complete detailed combustion and component characterization R&D for CLM/micro-pulverized coal fuels in selected existing light industrial, commercial and residential boiler/furnace systems. Also, detailed technical, economic, environmental and socio-aesthetic assessments on the use of CLM fuels in these systems will be completed. The specific characterization R&D and assessment efforts will render detailed documentation for private sector use that identifies/determines the adequacy of the selected equipment to accommodate CLM/micro-pulverized coal fuels.

FTE Staffing Request

Direct FTE's are funded by this budget activity and include Federal personnel directly engaged in in-house research at the Energy Technology Centers. Although all indirect FTE's are funded in the Program Direction and Management Support budget activity, those who support the planning, management, and contract technical direction functions for this activity are included here in order to provide a clearer indication of the total Federal workforce supporting this activity.

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
COMBUSTION SYSTEMS
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Atmospheric Fluidized Bed Combustion	Supported the TVA/EPRI demonstration project. ($15,000)	Supported the TVA 160 MWe demonstration project. ($14,334)	No activity. ($0)
	Completed support of the tube replacement at an existing AFB facility in the nation's capitol. ($1,278)	No activity. ($0)	No activity. ($0)
	Continued operations of East Stroudsburg and Wilkes-Barre AFB units utilizing prior year funding of $4,800. ($0)	Completed operations of East Stroudsburg and Wilkes-Barre AFB units utilizing prior year funding of $4,800. ($0)	No activity. ($0)
	Continued fluidization research, erosion mechanics, data base analysis, and in-house research. ($1,274)	Continued erosion, low rank coal, and economic studies of critical cost elements and in-house research. ($675)	Terminate design follow-on from economic studies; conduct in-house fluidization research in particle motion flow, erosion, bed internals and heat transfer surfaces. ($490)
	Continued investigation of advanced AFB concepts. ($885)	Completed economic system studies and commenced bench scale testing of advanced concepts ($762)	No activity. ($0); terminate advanced concept bench testing and special application PRDA.
	Initiated special application studies. ($300)	Initiated systems studies and bench designs of special AFB applications for the commercial/ institutional and residential sectors. ($801)	Complete system studies and bench scale designs. Initiate bench scale construction and testing. ($1,100)

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COMBUSTION SYSTEMS (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Pressurized Fluidized Bed Combustion	Continued to collect data from the PFB test rig at NYU. ($750)	Continued the program at NYU to test and evaluate advanced hot gas cleanup devices. ($769)	Continue ongoing program at NYU to evaluate PFB components and design changes to enhance performance and provide the basis for advanced concept designs. ($600)
	Initiated a program to investigate metal wastage to verify the mechanisms and kinetics of coal/sorbent combustion products, materials survivability, etc. in a PFB environment. ($300)	Completed laboratory metal wastage investigations to verify the mechanisms and kinetics of coal/sorbent combustion products, particle energies and materials survivability. ($480)	No activity. ($0)
	Continued fluidization research, in-house data analysis, mechanism studies, model validation and hybrid system engineering analysis. ($1,008)	Continued research on data analysis, mechanism studies, and engineering/systems analysis. ($676)	Continue research on PFB dynamics, systems analysis, and combustion characterization; continue technology and economic analysis assessments. ($586)
	Negotiated follow-on research at Grimethorpe to test key critical PFB process components. Initiated testing and evaluation of coal water mixture in PFB, design coal water mixture system using $600 of FY 1983 funding. ($0)	Initiated a cost-shared follow-on effort to test key critical PFB process components and to obtain process performance data. An additional $1,400 of FY 1984 funding will be used for this effort. ($1,441)	Continue the follow-on test program to obtain POC on hot gas cleanup, coal/water slurry feeding, and performance of updated heat exchanger design. ($1,500)
	Prepared and released a RFP for advanced cycle PFB systems that offer substantially improved cycles in terms of performance, reliability and operability. ($0)	Awarded the contract and initiated a multi-phase cost-shared program with the industrial sector for a high efficiency PFB system which will provide improvements in process economics as well as reliability, operability and environmental performance.($1,695)	Complete Phase I systems definition studies including conceptual design and cost of a commercial plant. Initiate Phase II, development and testing of key critical process components. ($1,000)

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COMBUSTION SYSTEMS (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Pressurized Fluidized Bed Combustion (cont'd)	Completed fluidization research on particulate flux/heat transfer, low rank coals and fluidization regimes at various pressures. ($400)	No activity. ($0)	No activity. ($0)
Advanced Combustion Technology	Completed combustion and system studies of partially developed combustor concepts. ($1,567)	Completed efforts associated with the AVCO advanced slagging combustor project, including test on the bench scale combustor. ($765)	No activity. ($0)
	Continued TRW advanced slagging combustor project. ($1,389 of prior year funds) ($0)	Completed TRW advanced slagging combustor project. ($854 of prior year funds) ($0)	No activity. ($0)
	Initiated pulsed combustor project. ($0)	Completed AVCO pulsed combustor project. ($433)	No activity. ($0)
	Planned to initiate an RFP for light industrial concept combustors. ($0)	Redirected RFP activity to a combined PRDA for light industrial, commercial, and residential concepts. Awarded contracts and initiated Phase I efforts consisting of economic and environmental assessments. ($1,655 which includes $951 of FY 1986 Congressional add-on)	Continue development of the most promising of the concepts selected including design, fabrication and testing. ($1,400)
	Completed conceptual designs and evaluations, and selected the most promising system for fabrication of a prototype combustor. ($400)	No activity (continued effort via PRDA) ($0)	No activity. ($0)

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COMBUSTION SYSTEMS (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Advanced Combustion Technology (cont'd)	No activity. ($0)	Initiated investigation of SOx and NOx emissions from combustors using varying air fuel ratios; conducted fuel characterization studies; conducted dense phase transport investigations; collected, organized and archived data. ($556)	Continue in-house activities supporting advanced combustion technology systems. ($482)
Alternative Fuels	Completed efforts in coal-water mixtures research for utility and large industrial applications. ($2,700)	No activity. ($0)	No activity. ($0)
	Completed preliminary combustion characterization phenomena identification for coal-liquid mixture technology areas applicable to heat engine systems. ($1,941)	No activity. ($0)	No activity. ($0)
	Continued research on ash loading limit and combustion system characterization for institutional/ residential application. ($1,200)	Initiated a generic combustion characterization R&D for CLM/ micro-coal in residential boiler/furnace systems. ($2,572)	Complete detailed combustion and system characterization and technical, economic, environmental and socio-aesthetic assessments on selected existing residential boiler/furnace systems firing CLM/micro-coal fuels. ($1,780)
	No activity. ($0)	Initiated industrial/commercial PRDA. ($1,354)	Complete industrial/commercial PRDA with $1,000 of prior year funding. ($0)
	Continued emissions characterization to identify and address potential and actual environmental intrusions from CLM use. ($1,089)	Continued emissions characterizations to address potential and actual effluents/intrusions from CLM use in the above listed applications. ($145)	(Emissions characterizations included in above comprehensive task). ($231)

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
LEAD TABLE
COAL
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(Tabular dollars in thousands. Narrative material in whole dollars.)

	FY 1985 Appropriation	FY 1986 1/ Appropriation	FY 1987 Base	FY 1987 Request	Request vs Base
Fuel cells (FE)					
Phosphoric acid systems:					
Operating expenses	$28,573	$20,355	$20,355	$ ...	$-20,355
Subtotal	28,573	20,355	20,355	...	-20,355
Molten carbonate systems:					
Operating expenses	8,851	9,932	9,932	3,400	-6,532
Subtotal	8,851	9,932	9,932	3,400	-6,532
Advanced concepts:					
Operating expenses	3,048	3,770	3,770	1,600	-2,170
Subtotal	3,048	3,770	3,770	1,600	-2,170
Total					
Operating expenses	40,472	34,057	34,057	5,000	-29,057
Fuel cells	$40,472	$34,057	$34,057	$ 5,000	$-29,057
Staffing Total FTE's: Direct	0	0	0	0	0
Indirect	13	11	11	5	-6

1/ Adjustments to the FY 1986 Appropriation are shown on the table on the following page.

Authorization: Section 4, P.L. 93-577
Section 301, P.L. 95-91

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Department of Energy

FY 1987 Congressional Budget Request

Adjustments to FY 1986 Appropriations

	FY 1986 Confer.	General Reduction	Gramm-Rudman-Hollings	Total
Fuel Cells (FE)				
Phosphoric Acid Systems				
Operating Expenses	$21,300	$-113	$-832	$20,335
Molten Carbonate Systems				
Operating Expenses	10,400	-62	-406	9,932
Advanced Concepts				
Operating Expenses	3,942	-18	-154	3,770
Subtotal, Fuel Cells	$35,462	$-193	$-1,392	$34,057
General Reduction:				
Operating Expenses	-193	193	-	-
Total, Fuel Cells (FE)	$35,449	-	$-1,392	$34,057
Operating Expenses	35,449	-	1,392	34,057

Summary of Changes

FY 1986 Appropriation enacted	$34,057
Program increases and decreases:	
Phosphoric Acid Systems	
o Complete all funding for development of the 11MW and 7.5 MW electric utility systems, on-site water-cooled and dielectric cooled systems and leave full responsibility to the private sector for any further development and application of these technologies	-20,355
Molten Carbonate Systems	
o Continue the development of external reforming and internal reforming fuel cell stacks. Continue efforts to develop improved components and corrosion resistant materials for molten carbonate cells	-6,532
Advanced Concepts	
o Continue research and development of solid oxide technology and critical materials	-2,170
FY 1987 budget request	$ 5,000

Fuel cells:

Goals/Objectives:

The objective of the Fuel Cells program is to support high risk, high payoff technology base development and to assist private industry in developing hydrocarbon fuel conversion technologies to increase the cost effective, efficient and environmentally acceptable use of conventional and alternative hydrocarbon fuels. The Administration position is that this objective will have been achieved for phosphoric acid systems by the end of FY 1986 and full responsibility will be left to the private sector for further development and application of phosphoric acid fuel cell technologies. The International Fuel Cell Corp. (IFC), a partnership of United Technologies and Toshiba of Japan, has already announced plans to market 11 MW systems based on the DOE-funded design.

Fuel cells are electrochemical (not combustion/Carnot cycle-limited) conversion systems which are highly efficient (40 to 60 percent), fuel-flexible, modular, and environmentally attractive energy conversion systems.

Potential fuel cell applications include electric utility multi-megawatt power plants (with or without cogeneration) and on-site multi-kilowatt cogenerating systems, transportation applications to include railroad, marine, trucks and buses (which represent 35 percent of oil consumption in transportation), defense applications including remote radar stations and stationary facilities, marine and submarine systems, and mobile power supplies with low infrared and noise signatures.

Fuel cell power plants can be sited at the point of both electrical and thermal energy need of stationary applications. With the power plant installed on-site, the heat produced by the plant while generating electricity can help meet the thermal needs of the consumer with reduced distribution and transmission losses. Fuel cells offer an energy conversion choice of interest to a broad sector of the economy. They have the potential of generating electricity with a wide spectrum of fuels including synthetic liquids (methanol, etc.), natural gas, and gases from coal, biomass and waste.

First generation phosphoric acid fuel cells potentially can be used in the following applications: electric utility dispersed peaking, intermediate and spinning reserve, building total energy systems, waste fuel recovery (e.g., industrial waste hydrogen,

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anaerobic digestors, and solid waste), industrial cogeneration, and defense applications. Because of their inherent advantages and potential, private industry has a strong incentive to support the development and commercialization of phosphoric acid fuel cells.

Advanced second generation molten carbonate and solid oxide fuel cells potentially can be used in: electric utility intermediate, baseload, on-site integrated energy systems and industrial cogeneration applications. These advanced fuel cell power plants can be integrated with coal gasifiers and can be bottomed with a steam or a gas turbine delivering electricity at approximately 50 percent efficiency (coal pile to busbar). Advanced fuel cell technical development trails behind phosphoric acid development but provides a potential of increased efficiency and reduced cost. It is therefore still an appropriate target for Federal support.

The technical feasibility of phosphoric acid fuel cells utilizing clean fuels (i.e., natural gas) has been established by testing preprototype systems in excess of 200,000 operating hours (cumulative hours on about 40 power plants to date). Emphasis has been on technology improvement to reduce the cost and increase the power density and endurance of phosphoric acid power plants, and to verify the operational feasibility in on-site and electric utility applications. The technical feasibility of molten carbonate fuel cells operating at approximately 60 percent electrical conversion efficiency (natural gas to busbar) has been forecasted by single cell testing. The complexity and associated capital costs of advanced fuel cell systems are projected to be less than those for first generation systems.

Solid oxide electrolyte fuel cells have the advantage of solid state stability and have been projected to be more easily manufactured. The operating temperature of 1800°F allows a highly efficient bottoming cycle with projected power plant efficiencies of approximately 50 percent.

FY 1986 Accomplishments:

Phosphoric Acid Systems
- o Continued technology development of water-cooled on-site systems; performed verification tests of prototype stack and plant subsystems.
- o Initiated testing of 25 kW on-site system including dielectric-cooled stack, fuel processor and inverter.
- o Continued inverter and stack technology work on the 11 MW water-cooled electric utility system through development of stack configuration "B".
- o Continued electric utility R&D with air-cooled stacks for a 7.5 MW system; began tests of 25 kW stacks and tests of 100 kW engineering model stack.
- o Continued a small activity for analytical evaluations in support of the above development efforts.

Molten Carbonate Systems
- o Completed verification testing of first external reforming, large area short stack.
- o Completed Energy Research Corporation's direct fuel cell technology in small cells.
- o Initiated PRDA for further development of external and/or internal reforming stacks.
- o Initiated development of a contaminant resistant fuel cell capable of processing gases containing sulfur and chlorine.
- o Continued system studies and research on cell corrosion and electrode stability.
- o Continued studies at ANL on new cathode materials and supporting research.

Advanced Concepts
- o Continued R&D effort at Westinghouse with fabrication and initial tests of 5 kW preprototype module.
- o Continued system studies and research on cell materials, cell fabrication techniques and evaluation of new concepts.

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Budget Request By Subactivity:	FY 1986 Approp.	FY 1987 Request	Net Change
Phosphoric acid systems	$20,355	$ ...	$-20,355

The Department is requesting no FY 1987 funding for phosphoric acid fuel cell development and proposes that further development be solely the responsibility of the private sector.

The objective of the phosphoric acid fuel cell program through FY 1986 has been to develop the technology for electric utility and on-site systems so that the private sector can demonstrate and commercialize powerplant systems in the post-FY 1986 time period. The program has been cost shared with the Electric Power Research Institute (EPRI), the Gas Research Institute (GRI), manufacturers and participating utilities.

In prior years, research and development efforts on phosphoric acid fuel cells have resulted in the demonstration of forty six 40 kW on-site fuel cell powerplants in gas utility service. Research and development funding has also provided for continuing the development of follow-on (higher power level) advanced, on-site powerplants which the private sector expects to commercialize in the 1987-1988 time period. Phosphoric acid fuel cell research and development efforts have also provided the technology verification of pressurized, large area (120 psia, 10 ft^2) fuel cell stacks for a commercial prototype 11 MW system, and early development of the cell and stack for an alternate 7.5 MW system.

FY 1986 funds were utilized to continue development of a water-cooled on-site system with verification testing of a prototype stack and plant subsystems as well as to continue development of a dielectric-cooled on-site system with testing of a 25 kW unit including stack, fuel processor and inverter. FY 1986 funds were also utilized to continue development of inverter and stack technology applicable to an 11 MW water-cooled electric utility system through development of stack configuration "B", as well as to continue development of a 7.5 MW system with tests of 25 kW and 100 kW stacks. Supporting analytical evaluations effort was continued at a low level.

The phosphoric acid fuel cell technology has, as a result of these developments and demonstrations, reached a maturity level such that the private sector can now assume full responsibility for the continuation of development and commercialization of this technology. No activities are proposed in FY 1987.

Molten carbonate systems	$ 9,932	$ 3,400	$ -6,532

The FY 1987 budget request will continue FY 1986 research activities at a reduced level of effort in the areas of external and internal reforming molten carbonate fuel cell stacks, cell components, and corrosion resistant materials. The private sector would be expected to assume a larger role in further development of molten carbonate fuel cell systems.

The objective of the molten carbonate fuel cell program has been to develop an advanced, high performance fuel cell technology for electric utility and industrial cogeneration applications. The technology would have the capability of using conventional hydrocarbon fuels such as natural gas or coal-derived gas. The program has been cost shared with EPRI.

In prior years, research and development efforts have resulted in the demonstration of short (20 cell) stacks and the initial verification of internal fuel reforming in single cells. A research effort has also been conducted to model the effects of sulfur contaminants on cell performance.

FY 1986 funds were utilized to continue technology activities associated with cell contaminants, corrosion mechanisms and mechanical deformation of stacks. FY 1986 funds

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were also utilized for the completion of development and test verification of an external fuel reforming, full area short stack and internal fuel reforming technology in small stacks. A PRDA was issued in FY 1986 for the further technology development of full area and full height internal and external reforming fuel cell stacks.

The technical feasibility of molten carbonate fuel cells has been demonstrated in small stacks in laboratories. In FY 1987, research will continue to develop internal and external reforming fuel cell stacks. Efforts will also continue to develop improved components and corrosion resistant materials for molten carbonate fuel cells.

	FY 1986 Approp.	FY 1987 Request	Net Change
Advanced concepts	$ 3,770	$ 1,600	$ -2,170

The FY 1987 budget request will continue FY 1986 research activities at a reduced level of effort in the testing of a 5 kW module and the development of a 25 to 200 kW generator. No additional funding is requested beyond FY 1986 for the completion of system studies and research on solid oxide fuel cell materials. The private sector would be expected to assume a larger role in further development of solid oxide fuel cell concepts.

The objective of the advanced concepts program has been focused on the technology development and verification of solid oxide fuel cells. The solid oxide fuel cell is an advanced, high temperature (1800°F) solid state fuel cell that offers promise in electric utility and in cogeneration applications (because of the high temperature) in industrial and commercial sectors. The program has been cost shared with the manufacturer.

In prior years, research and development efforts have focused on the fabrication and test verification of single cells and modules of 12 to 24 cells.

FY 1986 funds were utilized to continue technology development of a tubular solid oxide fuel cell concept including the fabrication and initial test of a 5 kW module and the initial design of a 25 to 200 kW generator.

The technical feasibility of solid oxide fuel cells have been demonstrated in small modules in laboratories. In FY 1987, efforts will be continued to develop solid oxide technology as well as critical materials research. Specifically, research efforts will continue the development of the 25 to 200 kW generator.

FTE Staffing Request

Direct FTE's are funded by this budget activity and include Federal personnel directly engaged in in-house research at the Energy Technology Centers. Although all indirect FTE's are funded in the Program Direction and Management Support budget activity, those who support the planning, management, and contract technical direction functions for this activity are included here in order to provide a clearer indication of the total Federal workforce supporting this activity.

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
FUEL CELLS
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Phosphoric Acid Systems	Continued technology development of on-site systems; completed testing of second 30-cell water-cooled short stack and testing of 200 kW developmental reformer. ($5,787)	Continued technology development of water-cooled on-site systems; performed verification tests of prototype stack and plant subsystems. ($5,591)	No further development work will be supported on this activity. However, close coordination will be maintained with the industrial sector, GRI, and EPRI. ($0)
	Completed testing of first 25 kW full size on-site stack with dielectric liquid coolant. ($1,967)	Began testing of 25 kW on-site system including fuel cell stack, fuel processor and inverter. ($2,198)	
	Continued electric utility R&D with water-cooled stacks (completed testing of second and third 10 square feet short stacks; completed 1000 hour test of full height stack). ($7,754)	Continued inverter and stack technology work on the 11 MW water-cooled electric utility technology through development of stack configuration "B". ($1,911)	
	Continued electric utility R&D with air-cooled stacks (completed testing of 10 kW stack and fabrication of 100 kW engineering model stack). ($11,688)	Continued electric utility R&D with air-cooled stacks for a 7.5 MW system (begin tests of 25 kW stacks and 100 kW engineering model stack). ($10,369)	
	Conducted analytical evaluations of candidate system configurations including coal using systems. ($1,377)	Continued a small activity for analytical evaluations in support of the above development efforts. ($286)	

FUEL CELLS (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Molten Carbonate Systems	Completed verification of technology in subscale stack tests and designed first large area short stack; continued a small technology base effort to support this development effort ($4,200). Completed verification of direct fuel reforming concept and continued a small technology base effort to support the direct-fueled concept; began development of direct-fueled cell stacks ($2,940).	Completed verification testing of first external reforming, large area short stack ($991). Completed development of direct fueled concept in small cells. Initiated PRDA to continue development of external and/or internal reforming molten carbonate stacks ($6,840).	Continue development of external and/or internal reforming molten carbonate stacks. ($2,600)
	No activity. ($0)	Initiated development of a contaminant resistant molten carbonate cell. ($477)	Complete development of a contaminant resistant cell. ($100 of FY 1986 funds)
	Continued technology base research on contaminants, life cycles, corrosion of components, and system analysis. ($1,504)	Continued system studies and research on contaminants, cell corrosion, cell mechanical deformation and electrolyte composition. ($1,146)	Continue technology base research on cell components and corrosion resistant materials. ($800)
	Initiated a study at ANL on promising new materials for use as cell cathodes and continued supporting research. ($207)	Continued a study at ANL on promising new materials for use as cell cathodes and supporting research. ($478)	No activity. ($0)
Advanced Concepts	Continued R&D effort on solid oxide technology operating on coal gas; initiated fabrication of 5 kW module. ($2,640)	Continued development of a tubular solid oxide fuel cell concept with fabrication and initial testing of a 5 kW module and initial design of a 25 to 200 kW generator. ($3,251)	Complete testing of a 5 kW module and continue development of 25 to 200 kW generator. ($1,600)

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FUEL CELLS (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Advanced Concepts (cont'd)	Continued selected technology base efforts including critical materials and alternative designs. ($408)	Continued system studies and research on solid oxide fuel cell materials, cell fabrication techniques and new concept evaluations. ($519)	Complete system studies and research on solid oxide fuel cell materials, cell fabrication techniques and new concept evaluations. ($75 of FY 1986 funds)

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
LEAD TABLE
COAL
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(Tabular dollars in thousands. Narrative material in whole dollars.)

	FY 1985 Appropriation	FY 1986[1/] Appropriation	FY 1987 Base	FY 1987 Request	Request vs Base
Heat engines (FE)					
Operating expenses	$11,850	$12,314	$12,314	$ 7,942	$ -4,372
Subtotal	11,850	12,314	12,314	7,942	-4,372
Total					
Operating expenses	11,850	12,314	12,314	7,942	-4,372
Heat engines	$11,850	$12,314	$12,314	$ 7,942	$ -4,372
Staffing Total FTE's: Direct ...	6	7	7	6	-1
Indirect .	10	9	9	8	-1

1/ Adjustments to the FY 1986 Appropriation are shown on the table on the following page.

Authorization: Section 4, P.L. 93-577
Section 301, P.L. 95-91

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Department of Energy

FY 1987 Congressional Budget Request

Adjustments to FY 1986 Appropriations

	FY 1986 Confer.	General Reduction	Gramm-Rudman-Hollings	Total
Heat Engines (FE)				
Operating Expenses	$12,886	$-69	$-503	$12,314
Subtotal, Heat Engines (FE) ..				
General Reduction: Operating Expenses	$ 69	69	-	-
Total, Heat Engines (FE)	$12,817	-	$-503	$12,314
Operating Expenses	12,817	-	-503	12,314

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Summary of Changes

FY 1986 Appropriation enacted	$12,314
Program increases and decreases:	
Heat Engines	
o Continue research activities, at a reduced level, related to the FY 1985 PRDA for coal fired gas turbine major systems component development to provide selected integrated systems test validations by a target date of 1990-1992. Continue coal fired diesel engine component design and evaluation program and initiate research activities related to the FY 1986 PRDA for diesel engine integrated test validation	-4,372
FY 1987 budget request	$ 7,942

Heat engines:

Goals/Objectives:

The principal goal of this program is to establish technical data which will enable the private sector to assess the commercial viability of coal-fueled power conversion systems. The program focuses on key technical problems associated with substituting coal or coal-derived gaseous fuels for distillate fuels or natural gas in gas turbine and diesel power conversion systems. The program goal is to assist the private sector, through selected research efforts, to develop the technology needed for direct firing of coal, either dry or suspended in a liquid carrier, or a coal-derived gaseous fuel cleaned at minimal cost.

Specific program objectives are to:

- o Establish component design, fuel specification, and operating requirements for coal fueled gas turbine power systems and determine, through integrated systems tests, the commercial feasibility of selected system concepts in specific railroad, marine, industrial, or utility applications.
- o Establish basic design, combustion, materials, and fuel interactions and related engineering data to facilitate private sector assessment of commercial viability of coal-fired diesel systems through integrated systems tests.

FY 1986 Accomplishments:

- o Initiated research activities, at a reduced level, related to FY 1985 PRDA for coal fired gas turbine major system component development to provide selected integrated systems test validations by a target data of 1990-1992. The contracts to be structured so as to allow completion of specific portions of the work commensurate with available funds.
- o Continued economic and technical studies by diesel manufacturing firms of potential coal-fired diesel power systems in specific railroad or industrial service. Based on results, formulated general requirements for integrated engineering development of selected system concepts.
- o Established technical feasibility of slagging combustor design concepts and/or sorbent injection approaches to extract deleterious impurities from the combustion gases produced by selected coal fuels.
- o Completed report requested by Congress on feasibility of coal-fired locomotive.
- o Initiated PRDA for coal-fired diesel engine integrated systems test validations.

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Budget Request By Subactivity:	FY 1986 Approp.	FY 1987 Request	Net Change
Heat engines	$12,314	$ 7,942	$ -4,372

The FY 1987 budget request will continue FY 1986 research activities at a reduced level of effort.

The Heat Engines program is directed towards major engineering design, durability, and performance problems associated with the substitution of coal or coal-derived fuels for distillate fuels and natural gas in gas turbine and diesel power conversion systems. This fuel substitution creates technical problems in both types of engines. In turbines, the durability of major components (i.e., combustors, transition ducts and turbine airfoils) are of concern. Similarly, the hostile environments created by firing coal-based fuels affect the durability of diesel engine components, particularly cylinder walls, pistons, valves and injectors. In addition, both applications require adjustments of combustion component design and conditions to suppress NO_x emissions and to ensure efficient combustion of coal-based fuel.

Activities under the Gas Turbine Program are being coordinated and directed towards definitive integrated systems testing, targeted for the 1990-1992 time period. Major component design, development, and integrated test evaluation will be conducted by qualified industrial contractors. Essential engineering research and analytical support relating to fuel specifications, design analyses, environmental concerns, and quality control considerations are being carried out in DOE and national laboratories or by qualified university and private sector research organizations. Coal-derived gaseous fuels, coal-liquid slurry fuels, and dry powdered coal are all being evaluated under the program. The integrated systems tests are expected to provide a firm basis for private sector commercial development of power systems for such applications as railroad locomotives, industrial cogeneration, or utility combined cycle power generation.

The Diesel Program is planned similarly to reach the integrated systems test phase in the 1992-1994 period. Following preliminary analytical studies and experimental feasibility testing, major diesel manufacturers will be solicited to competitively or cooperatively develop and test, integrally, essential power system components. Supporting activities will be conducted in a manner similar to the gas turbine approach. The program aims toward eventual rail locomotion and industrial cogeneration applications.

FY 1987 anticipated accomplishments include:

- Continue combustion tests in the gas turbine combustor test stand to determine combustion characteristics of various fuels and the establishment of preliminary coal fuel specification.
- Continue combustion and wear tests utilizing coal liquid mixtures in the new "in-house" diesel engine test facility at METC.
- Initiate research activities related to the FY 1986 PRDA for the coal-fired diesel engine integrated systems test validation.
- Complete preliminary coal-fueled testing of diesel test facility components including fuel injection system, combustion chamber, and piston assemblies.
- Complete engineering tests to determine the feasibility of slagging combustors and sorbent additions.
- Complete first portion of the coal-fired gas turbine integrated systems test validation program.

FTE Staffing Request

Direct FTE's are funded by this budget activity and include Federal personnel directly engaged in in-house research at the Energy Technology Centers. Although all indirect FTE's are funded in the Program Direction and Management Support budget activity, those

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who support the planning, management, and contract technical direction functions for this activity are included here in order to provide a clearer indication of the total Federal workforce supporting this activity.

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
HEAT ENGINES
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Gas Turbines	Established preliminary design and operating requirements for gas turbine systems burning coal derived gas and fine particulate fuel forms; completed PRDA activities in connection with major system components development. ($7,602)	Initiated limited research activities of FY 1985 PRDA aimed towards that portion of the integrated systems test validation which can be completed in FY 1987. ($8,432)	Complete first portion of the integrated systems test program. ($5,994)
	Continued evaluation of advanced gas turbine combustor design concepts. ($300)	Continued essential engineering test stand evaluation of gas turbine combustor design dry coal fuels in support of major component development contracts ($1,297)	Continue evaluation of CLM in gas turbine combustor test stand. ($400)
	Completed initial analyses of economic and performance factors relating to gas turbine applications. ($100)	No activity. ($0)	No activity. ($0)
	Initiated a study for development of an integrated coal-fired power train for locomotive applications. ($492)	Completed report requested by Congress on feasibility of coal-fired locomotive. ($0)	No activity. ($0)

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HEAT ENGINES (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Diesels	Completed initial bench scale evaluation of combustion and wear limitations while burning fine coal under simulated diesel engine conditions; initiated installation of a single cylinder experimental diesel test stand ($1,456). Initiated analyses and preliminary experimental evaluation of diesel component design concepts intended for engine applications using coal-based fuels ($1,900).	Continued technical and economic analyses and related experimental feasibility tests of coal-fired diesel power systems for selected locomotive, marine and industrial applications. Initiated PRDA for coal-fired diesel engine integrated systems test validations. ($2,585)	Continue evaluation of CUM in diesel engine test facility. Initiate research activities related to FY 1986 PRDA for the coal-fired diesel engine integrated systems test validation. Complete technical and economic analyses and related experimental tests of coal-fired diesel engine project. ($1,548)

DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
LEAD TABLE
COAL
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(Tabular dollars in thousands. Narrative material in whole dollars.)

	FY 1985 Appropriation	FY 1986 1/ Appropriation	FY 1987 Base	FY 1987 Request	Request vs Base
Underground coal gasification (FE)					
Gasification technology development:					
Operating expenses	$ 3,098	$ 2,352	$ 2,352	$ ...	$ -2,352
Subtotal	3,098	2,352	2,352	...	-2,352
Environmental and advanced research:					
Operating expenses	2,607	1,720	1,720	...	-1,720
Subtotal	2,607	1,720	1,720	...	-1,720
Total					
Operating expenses	5,705	4,072	4,072	...	-4,072
Underground coal gasification	$ 5,705	$ 4,072	$ 4,072	$ ...	$ -4,072
Staffing Total FTE's: Direct	0	0	0	0	0
Indirect	13	9	9	0	-9

1/ Adjustments to the FY 1986 Appropriation are shown on the table on the following page.

Authorization: Section 4, P.L. 93-577
Section 301, P.L. 95-91

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Department of Energy

FY 1987 Congressional Budget Request

Adjustments to FY 1986 Appropriations

	FY 1986 Confer.	General Reduction	Gramm-Rudman-Hollings	Total
Underground Coal Gasification (FE)				
Gasification Technology Development Operating Expenses	$2,460	$-12	$-96	$2,352
Environmental and Advanced Research Operating	1,800	-10	-70	1,720
Subtotal, Underground Coal Gasification (FE)	4,260	-22	-166	4,072
General Reduction: Operating Expenses	-22	22	-	-
Total, Underground Coal Gasification (FE)	$4,238	-	$-166	$4,072
Operating Expenses	4,238	-	-166	4,072

Summary of Changes

FY 1986 Appropriation enacted	$ 4,072
Program increases and decreases:	
Gasification Technology Development	
o Phase out technology base activities and initiate applied research under the cooperative R&D venture pool	-2,352
Environmental and Advanced Research	
o Phase out technology base activities and initiate applied research under the cooperative R&D venture pool	-1,720
FY 1987 budget request	$ ...

Underground coal gasification:

Goals/Objectives:

Underground Coal Gasification (UCG) is a process for converting coal, in place (in situ), to a readily cleanable synthetic gas comparable to that produced from surface gasification systems. The energy for the process is derived from partial combustion of the coal (pyrolysis) resulting in the identical reactions that occur in aboveground gasification. The process is being developed to address the coal resources considered unmineable for either economic or technical reasons, e.g., steeply dipping, high ash, deeply buried, or high sulfur coals. Advantages of the technology include low front end capital requirements, short lead time required to establish a plant in operation, relative freedom from the usual economies-of-scale considerations, utilization of less desirable coals, the ability of the process to convert all the sulfur in the coal to readily removable "acid-gas" (Hydrogen sulfide), and the ability to produce a wide variety of end use products. As to the latter, gasification with air produces a low Btu gas (100-175 Btu/SCF) suitable for power generation or industrial heat while gasification with an injection mixture of steam and oxygen produces a medium Btu gas (175-350 Btu/SCF) either for the same uses or as a chemical feedstock for the production of methanol, ammonia, or for upgrading to a suite of products.

A series of tests at varying scale have been conducted over the past several years on UCG. The process was essentially proven for steeply dipping (greater than 35 degrees) shrinking subbituminous coals through a cost shared field development program with the Gulf R&D Company. Some questions remain regarding application of UCG to flat lying subbituminous coals prior to an industry takeover of the final stages of development. Answers essential to this next step along the R&D path are being sought through a three year program begun in FY 1985. These technology base activities will be completed in FY 1987. Application of UCG to bituminous coals represents a greater technological challenge primarily because it swells and tends to choke off gas flow required to link injection and production wells. In addition, bituminous coals usually occur in thinner seams which present a more difficult drilling and linking target and compound thermal losses during operation. Preliminary testing has proven encouraging, however, and Peabody Coal Company (with support from the State of Illinois) has agreed to participate in a cooperative program to explore the potential of UCG in bituminous coals at a site in southern Illinois. Paralleling the subbituminous and bituminous process research is an environmental program concerned primarily with preventing or predicting and mitigating the effects of aquifer contamination and subsidence. Empirical models developed for subsidence prediction appear adequate at this time but an understanding of aquifer contamination mechanisms and mitigation or clean up measures must be developed if UCG is to be deemed an environmentally acceptable technology. The approach will be to address these issues in concert with planned cooperative ventures. Also, there is need to perform certain monitoring activities at previous test sites to comply with Federal and state laws (funding requirements in this regard are declining as sites are declared acceptable and abandoned).

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Because of the inherent advantages of UCG discussed above, there is a high degree of international interest in the technology. This interest has allowed us to leverage our resources through cooperative programs with two countries to date: (1) We have an agreement with Brazil to collaborate on planned developments there with the U.S. receiving data from field tests; and (2) We have received approval and funding from the U.S./Spain Joint Science and Technology Committee for a joint research project with Spain which will provide valuable data on bituminous UCG. Other countries have expressed a desire to work with DOE. This interest will be aggressively pursued under the cooperative R&D venture pool.

The major objectives of this program are the following:

- o Pursue the development of environmentally acceptable in situ technologies for converting coals which are unattractive to mine into clean liquid or gaseous fuels.
- o Demonstrate the viability of producing medium-Btu gas from low-rank coals utilizing steam/oxygen, to provide a suitable feedstock for surface upgrading and/or combustion.
- o Test the viability of underground gasification of low to moderate swelling, bituminous coals.
- o Increase the data base to support private sector development of economically viable in situ conversion processes.
- o Work actively with industry to ensure maximum technology transfer.
- o Actively seek opportunities to leverage project funds for process development activities through cooperative projects with industry and with foreign research and development groups studying UCG.

FY 1986 Accomplishments:

FY 1986 accomplishments include:

- o Completed second year of a three year effort to establish a technology base for application of UCG to subbituminous coals sufficient to launch industrial process development.
- o Completed a series of large-block tests on WRI's large laboratory reactor to test feasible concepts and determine operating mechanisms in support of the field programs.
- o Completed necessary monitoring data receipt and advising as needed in cooperating with early UCG efforts in Spain, Brazil, India and Yugoslavia.
- o Completed essential post-burn monitoring and evaluation of past UCG test sites.
- o Completed on-going laboratory and test site research directed toward aquifer restoration methods and contaminant mitigation procedures along with the completion of a predictive model for migration of potential contaminants after operation and development of a plan for aquifer clean-up if this should prove necessary.
- o Completed further development of process models to assist industry in plans for follow-on development of the processes.

Budget Request By Subactivity:	FY 1986 Approp.	FY 1987 Request	Net Change
Gasification technology development	$ 2,352	$ ...	$ -2,352

No funds are requested in FY 1987 for this program. A three year effort initiated in FY 1985 to develop a technical data base requisite to industrial process development will be concluded using previously appropriated funds. Follow-on research and development activities will be pursued through potential cooperative ventures with industry.

Environmental and advanced research	$ 1,720	$ ...	$ -1,720

The reduction in funding from the FY 1986 level reflects completion of environmental data base development activities in part through the three year program discussed above

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and thrpugh parallel laboratory and field testing conducted by the Lawrence Livermore National Laboratories and the Western Research Institute.

FTE Staffing Request

Direct FTE's are funded by this budget activity and include Federal personnel directly engaged in in-house research at the Energy Technology Centers. Although all indirect FTE's are funded in the Program Direction and Management Support budget activity, those who support the planning, management, and contract technical direction functions for this activity are included here in order to provide a clearer indication of the total Federal workforce supporting this activity.

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
UNDERGROUND COAL GASIFICATION
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Gasification Technology Development	Initiated three year effort to establish a technology base for application of UCG to subbituminous coals sufficient to launch industrial process development. ($1,898)	Complete second year of technology base development. ($1,922)	Complete technology base development using prior year funds.
	Conducted 1/5 scale laboratory retort tests for precise definition of critical UCG parameters for validation and upgrading of process models. ($1,000)	Completed modeling and supporting research activities in support of field test and investigated the application of data developed in the program to other coal types. ($334)	No activity. ($0)
	Monitored and advised as needed during early UCG efforts in Brazil and Spain. ($200)	Completed international technology transfer activities in UCG. ($96)	No activity. ($0)
Environmental and Advanced Research	Continued essential post-burn monitoring and site restoration of past UCG burn sites and modeling of process effects; continued laboratory and test site research directed toward aquifer restoration and UCG contaminant mitigation. ($1,357)	Completed post-burn environmental monitoring and mitigation activities to ensure compliance with state environmental departments and reduce the risk of subsequent development by researchers and industry. ($951)	No activity. ($0)

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UNDERGROUND COAL GASIFICATION (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Environmental and Advanced Research (cont'd)	Conducted large block studies of critical process parameters such as pressure on product composition or improved concepts. ($1,250)	Completed laboratory studies of critical process parameters as well as research in the areas of physical, chemical, and microbiological cleanup of phenols and other contaminants which may result from UCG. ($769)	No activity. ($0)

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
LEAD TABLE
COAL
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(Tabular dollars in thousands. Narrative material in whole dollars.)

	FY 1985 Appropriation	FY 1986[1/] Appropriation	FY 1987 Base	FY 1987 Request	Request vs Base
Magnetohydrodynamics (FE)					
Proof-of-concept topping cycle:					
Operating expenses	$18,344	$18,302	$18,302	$ ...	$-18,302
Subtotal	18,344	18,302	18,302	...	-18,302
Proof-of-concept bottoming cycle:					
Operating expenses	8,500	8,024	8,024	...	-8,024
Subtotal	8,500	8,024	8,024	...	-8,024
Proof-of-concept seed regeneration:					
Operating expenses	600	388	388	...	-388
Subtotal	600	388	388	...	-388
System studies and supporting research:					
Operating expenses	3,277	1,003	1,003	...	-1,003
Subtotal	3,277	1,003	1,003	...	-1,003
Total					
Operating expenses	30,721	27,717	27,717	...	-27,717
Magnetohydrodynamics	$30,721	$27,717	$27,717	$ ...	$-27,717
Staffing Total FTE's: Direct	0	0	0	0	0
Indirect	12	0	0	0	0

1/ Adjustments to the FY 1986 Appropriation are shown on the table on the following page.

Authorization: Section [illegible], P.L. 93-577
Section 301, P.L. 95-91

Department of Energy

FY 1987 Congressional Budget Request

Adjustments to FY 1986 Appropriations

	FY 1986 Confer.	General Reduction	Gramm-Rudman-Hollings	Total
Magnetohydrodynamics (FE)				
Operating Expenses	$29,000	$-150	$-1,133	$27,717
Subtotal, Magnetohydrodynamics (FE)	$29,000	$-150	$-1,133	$27,717
General Reduction:				
Operating Expenses	-150	150	1,133	-
Total, Magnetphydrpdynamics (FE)	$28,850	-	$-1,133	$27,717
Operating Expenses	28,850	-	-1,133	27,717

Summary of Changes

FY 1986 Appropriation enacted	$27,717
Program increases and decreases:	
Magnetohydrodynamics	
o Terminate the MHD program	-27,717
FY 1987 budget request	$ ...

Magnetohydrodynamics:

Goals/Objectives:

The Department believes that the cost of continuing its MHD program is not affordable in light of current fiscal constraints and has reassessed its priorities for fossil energy technologies and determined that other technologies could contribute more directly to DOE's objectives with lower investment requirements, in a more timely manner, and with significantly more cost-sharing. We believe that the private sector interests that have promoted MHD are in a position to continue to develop MHD technology based on the Federal Government's efforts to date. The private sector can continue the MHD program with an-in-kind contribution by the Government of facilities and equipment valued at approximately $120 million.

FY 1986 Accomplishments:

- o Completed eight-hour (nominal) integrated combustor-channel power generation test at the CDIF.
- o Completed testing of baghouse and electrostatic precipitator at the CFFF.
- o Awarded cost-shared seed recovery/regeneration contract and initiated bench-scale testing.
- o Awarded cost-shared contract for feasibility and conceptual design study of a coal-fired MHD retrofit.
- o Awarded cost-shared contract for an integration/mission contractor.
- o Awarded cost-shared contract for a prototypical 50MW (thermal) coal-fired combustor.
- o Awarded cost-shared contract for a prototypical long-duration channel.

Budget Request:

	FY 1986 Approp.	FY 1987 Request	Net Change
Magnetohydrodynamics	$27,717	$ ...	$-27,717

The Department requested no funding in FY 1986 assuming that the MHD program would be terminated in FY 1985. However, Congress overturned the Department's proposed FY 1985 deferral stipulating in the Conference Report of July 2, 1985, that "the managers expect the MHD community to develop and submit to the appropriate Congressional committees a plan for significant industry cost-sharing which would include increasing commitments above existing levels. The new cost-sharing plan should be based on the MHD development plan submitted by the Department to Congress in June 1984. Additional funds should not be appropriated absent increased cost-sharing."

Bill language for FY 1986 provides $28,850,000 to fund a cost-shared, multi-year MHD program. The costs of fabricating equipment to be tested in the Government-owned facilities are to be included in the amounts that require cost sharing. The costs of installing and testing equipment are not to be subject to cost sharing.

No funds are requested for FY 1987. The transition of the MHD program activities from the Congressionally directed FY 1986 activities to termination will be addressed as part of subsequent FY 1986 budget proposals. It is anticipated that the large amount of

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equipment and facilities having significant value and owned by the Government can be made available to private industry in a manner that will allow industry to continue the development of the technology consistent with their interests and funding availabilities.

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
MAGNETOHYDRODYNAMICS
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Magnetohydro-dynamics	Operated Fossil Energy users laboratory to obtain data for design of steam-bottoming components. Work was performed by Argonne National Laboratory, Argonne, IL. ($900)	Continued operation of Fossil Energy user laboratory. Work was performed by Argonne National Laboratory, Argonne, IL. ($777)	Terminate. ($0)
	Developed MHD channels and current control circuits. Work was performed by AVCO Everett Research Laboratory, Everett, Mass. ($5,102)	Designed and constructed a prototypical long-duration channel. Work was performed by AVCO Everett Research Lab. ($4,491)	Terminate. ($0)
	Provided technical support and data base management for PETC. Work was performed by Burns & Roe Corp., Pittsburgh, Pa. ($268)	Continued technical support for PETC. Work was performed by Burns & Roe Corp. ($436)	Terminate. ($0)
	Developed technology base for heat recovery/seed recovery subsystem. Work was performed by Babcock & Wilcox, Barberton, Ohio. ($100)	Continued development of technology base for HRSR subsystem. Work was performed by Babcock & Wilcox. ($87)	Terminate. ($0)
	Planned award of conceptual design contract. ($0)	Awarded contract for conceptual design of MHD retrofit plant. ($175)	Terminate. ($0)
	Administered MHD contracts for PETC. Work was performed by Chicago Operations Office, Chicago, IL. ($100)	Continued administration of MHD contracts for PETC. Work was performed by Chicago Operations Office. ($87)	Terminate. ($0)

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MAGNETOHYDRODYNAMICS (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Magnetohydrodynamics (cont'd)	Planned award of integration/mission contract. ($0)	Awarded contract for integration/mission contractor. ($175)	Terminate. ($0)
	Developed superconducting magnet technology. Work was performed by Massachussetts Institute of Technology, Cambridge, Mass. ($258)	Continued development of superconducting magnet technology. Work was performed by MIT. ($218)	Terminate. ($0)
	Operated CDIF to obtain proof-of-concept data. Work was performed by Mountain States Energy, Butte, Montana. ($9,833)	Continued operation of CDIF. Work was performed by Mountain States Energy. ($9,211)	Terminate. ($0)
	Developed diagnostic instrumentation for MHD proof-of-concept testing at the CDIF and CFFF. Work was performed by Mississippi State Univ., Starkville, Miss. ($2,000)	Continued development of diagnostic instrumentation. Work was performed by Miss. State Univ. ($1,747)	Terminate. ($0)
	Planned award of seed regeneration contract. ($0)	Awarded contract for seed regeneration process development. ($388)	Terminate. ($0)
	Conducted fundamental research on MHD phenomena. Work was performed by Stanford University, Stanford, CA. ($39)	Continued fundamental research on MHD phenomena. Work was performed by Stanford Univ. ($175)	Terminate. ($0)
	Analyzed MHD performance using 3-dimensional computer models. Work was performed by STD Corp., Monrovia, CA. ($667)	Continued use of computer models to analyze and predict MHD performance. Work was performed by STD Corp. ($628)	Terminate. ($0)

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MAGNETOHYDRODYNAMICS (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Magnetohydro-dynamics	Developed coal-fired combustors for use in POC testing at the CDIF. Work was performed by TRW Corp., Redondo Beach, CA. ($3,905)	Designed and constructed prototypical 50 MW thermal coal-fired combustor. Work was performed by TRW. ($2,706)	Terminate. ($0)
	Operated CFFF to obtain proof-of-concept data. Work was performed by the University of Tennessee Space Institute, Tullahoma, Tenn. ($7,060)	Continued operation of CFFF. Work was performed by the Univ. of Tenn. ($6,199)	Terminate. ($0)
	Obtained engineering data base for the design, construction, and operation of MHD power trains. Work was performed by Westinghouse Electric Corp., Pittsburgh, Pa. ($489)	Continued development of engineering data base for MHD power trains. Work performed by Westinghouse Electric. ($217)	Terminate. ($0)

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
LEAD TABLE
COAL
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(Tabular dollars in thousands. Narrative material in whole dollars.)

	FY 1985 Appropriation	FY 1986[1/] Appropriation	FY 1987 Base	FY 1987 Request	Request vs Base
Surface coal gasification (FE)					
Advanced research:					
Operating expenses	$ 3,364[2/]	$ 3,379	$ 3,379	$ 968	$ -2,411
Subtotal	3,364	3,379	3,379	968	-2,411
Advanced process development:					
Operating expenses	4,376	5,229	5,229	1,689	-3,540
Subtotal	4,376	5,229	5,229	1,689	-3,540
Systems engineering concepts:					
Operating expenses	20,878	27,949	27,949	1,373	-26,576
Subtotal	20,878	27,949	27,949	1,373	-26,576
Environmental and engineering analyses:					
Operating expenses	3,516	2,113	2,113	1,131	-982
Subtotal	3,516	2,113	2,113	1,131	-982
Great plains coal gasification project:					
Operating expenses	3,000	2,653	2,653	437	-2,216
Subtotal	3,000	2,653	2,653	437	-2,216
Total					
Operating expenses	35,134	41,323	41,323	5,598	-35,725
Surface coal gasification	$35,134	$41,323	$41,323	$ 5,598	$-35,725
Staffing Total FTE's: Direct	20	23	23	18	-5
Indirect	41	37	37	43	+6

1/ Adjustments to the FY 1986 Appropriation are shown on the table on the following page.

2/ Gasification processes ($3.364M) transferred to this activity from the Advanced Research and Technology Development activity.

Authorization: Section 4, P.L. 93-577
Section 301, P.L. 95-91

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Department of Energy

FY 1987 Congressional Budget Request

Adjustments to FY 1986 Appropriations

	FY 1986 Confer.	General Reduction	Gramm-Rudman-Hollings	Total
Surface Coal Gasification (FE)				
Advanced Research				
Operating Expenses	$ 3,535	$-18	$-138	$3,379
Advanced Process Development				
Operating Expenses	5,472	-29	-214	5,229
Systems Engineering Concepts				
Operating Expenses	29,243	-152	-1,142	27,949
Environmental and Engineering Analyses				
Operating Expenses	2,212	-13	-86	2,113
Great Plains Coal Gasification Proj.				
Operating Expenses	2,775	-14	-108	2,653
Subtotal, Surface Coal Gasification (FE)	$43,237	$-226	$-1,688	$41,323
General Reduction:				
Operating Expenses	-226	226	-	-
Total, Surface Coal Gasification (FE)	$43,011	-	$-1,688	$41,323
Operating Expenses	43,011	-	-1,688	41,323

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Summary of Changes

FY 1986 Appropriation enacted	$41,323
Program increases and decreases:	
Advanced Research	
o Complete advanced research in the areas of gas separation techniques and kinetics of coal gasification. Reduce research in the areas of fundamental chemistry and reaction mechanisms, and the chemistry of ash and slag from gasifiers	-2,411
Advanced Process Development	
o Redirect effort to focus only on the support of those studies specifically generating data required to establish the feasibility of advanced and novel techniques leading to the use of coal gasification technology in the generation of alternate energy options from coal	-3,540
Systems Engineering Concepts	
o Complete all efforts on projects that are being supported to generate reliability, availability and maintainability (RAM) and proof-of-concept (POC) data. In addition, redirect all studies that are considered to be engineering development efforts by nature	-26,576
Environmental and Engineering Analyses	
o Conclude all projects now being supported in waste water management and in the generation of data on other environmental aspects of coal gasification that are either available through the judicious extrapolation of the data base or which are or will be generated through the operation of existing coal gasification facilities (e.g., Great Plains Coal Gasification Plant, Cool Water, Dowsyn, Kilngas, etc.)	-982
Great Plains Coal Gasification Project	
o Reduce monitoring and management activities	-2,216
FY 1987 budget request	$ 5,598

Surface coal gasification:

Goals/Objectives:

The coal resource base of the United States is the largest single potential source of alternate hydrocarbon liquids and gases available to resolve anticipated energy supply problems of the Nation. As a heterogeneous SOLID feedstock, the full potential of this resource can be achieved only if it can be converted into useable alternate LIQUID AND GASEOUS energy products and chemical feedstocks.

The role that the Surface Coal Gasification Program serves in accomplishing the goals and objectives of the Office of Fossil Energy and the Department of Energy is to develop the full capabilities of coal gasification technology as a means of converting coal into those alternate energy forms that do create options for almost every sector of the energy consuming marketplace.

The research approach to the development and use of the most appropriate, efficient, and advanced concepts suitable for use in accomplishing that goal recognizes and accommodates the wide range in requirements of that marketplace. While that marketplace requires an almost unlimited number of coal gasification systems to respond to the specific needs of the consumer, (the availability of resource type, specific site requirements, etc.), the research and development program recognizes that each of these many systems can be grouped into one of several major classes. These classes include

systems for the production of power, industrial fuel gas, synthesis gas and coproducts or new fuels. The advances in the technology required to formulate and use these systems are being developed in research and development projects that are considered to be long-range and high-risk with objectives particularly suited to resolving the major issues and problems encountered in developing new promising alternatives for each of the separate processing units of these systems. Included among these units are feedstock modification, gasifier performance, particulate removal and heat recovery, acid gas removal and composition control, as well as fuel conversion and product upgrading. Completion of these activities will create the maximum number of options by which the energy consuming marketplace can use coal to fill its energy requirements.

In these activities R&D efforts are now focused on the acquisition of data leading to a further understanding of the gasification process and the functional links between that process and the operational parameters that will permit:

- o the state of the technology to remain current with those advances being made in associated fields and to be responsive to any advanced processing system designed to accommodate a changing market for fuels
- o development of any new concepts that appear to be 'break throughs' which have significant potential to improve the technology or contribute to its application in generating energy supply options
- o confirmation of the chemistry, kinetics and thermodynamics of the gasification process required to confirm, extend and apply advanced concepts leading to a fuller utilization of the total flexibility of the process

Successful completion of these activities will achieve the two major goals of the Surface Coal Gasification program.

These specific program goals which have been established to insure that the program creates options responsive to the requirements of those sectors of the U.S. economy that can use the technology to generate alternate energy products from coal are:

- o Advance the state-of-the-art of Surface Coal Gasification technology to optimize its potential for development of more viable or advanced gasification systems through the study of promising long term, high risk concepts that have significant potential to:
  - increase overall system efficiency
  - reduce capital costs
  - reduce system operating costs
  - reduce facility construction time
  - increase plant availability
  - reduce to a minimum the potential for any environmental impact caused by these facilities.

- o Identify and support those R&D efforts that will make available the full capabilities and processing flexibility of surface coal gasification systems as the key coal conversion technology directly applicable for generating alternative energy options from coal for every sector of the energy consuming marketplace.
- o Continue management and monitoring of the Great Plains Gasification Demonstration Project as necessary.

FY 1986 Accomplishments:

- o Completed slip stream testing studies.
- o Completed the cooperative operational program investigating reliability, availability, and maintainability (RAM) characteristics of the Allis-Chalmers KILnGAS Coal Gasification Demonstration Facility.
- o Completed a cooperative program investigating the pressurized ash agglomerating fluidized-bed coal gasification integrated system for combined cycle electric power production or other industrial uses (including hot gas cleanup and hot particulate removal as part of the integrated system).

- Continued to provide engineering analyses and systems evaluation as required to support activities of the joint DOE/GRI Coal Gasification Program.
- Completed testing of the CO_2 triple point crystallizer and sulfur absorber sections of the liquid CO_2 gas cleanup system.
- Concluded the electroslag component casting project and demonstrated its capability for producing high quality, low cost equipment castings.
- Concluded the instrumentation project for measuring gas stream alkali particulates composition.
- Concluded the atomic absorption instrumentation project for measuring gasifier product gas stream composition.
- Completed an entrained flow data book.
- Completed multicomponent equilibrium studies, pressure-swing adsorption studies, and modeling for cyclic separation of gases using coal based sorbents.
- Concluded studies on environmental aspects of coal gasification to include waste water management, effluent control systems, and impact of gasification plant environments on worker health.
- Completed studies of novel approaches to usage of micro-organisms for removal of trace amounts of organic contaminants in waste water.
- Completed a study on hybrid gasification reactors that use flexibility and advantages of different designs to maximize coproduct yields for specific industrial applications.
- Concluded studies of integrated gasification systems to provide the data needed to predict optimized configuration for various product yields.
- Completed reactivation of fixed-bed gasification PDU at METC.
- Completed studies on performance of fixed-bed gasifier, hot gas cleanup unit and turbine test stand during integrated operation under dynamic as well as steady state operating conditions.

Budget Request By Subactivity:	FY 1986 Approp.	FY 1987 Request	Net Change
Advanced research	$ 3,379	$ 968	$ -2,411

The objectives of the Advanced Research (AR) gasification studies include investigations on: (1) new fundamental concepts about coal structures and the physical and chemical mechanisms whereby these structures undergo devolatilization and gasification; (2) mathematical models, based on fundamental principles, which can be used to predict and simulate behavior of gasification and other subsystems under new conditions; (3) laboratory scale experimental and analytical studies of the chemistry and fluid dynamics of ash and slag in various gasification systems; and (4) novel gas separation and gas cleanup processes which have the potential for providing technical and economic advances in gas separation technology.

The following accomplishments are representative of progress expected in FY 1986:

- Advances will be made towards completing a mathematical model that can be used to predict gasification product yields and rates as a function of the chemical structure of coal.
- A novel ion exchange membrane technique will be applied to demonstrate the separation of acid gases from the gasification products.
- A fundamental investigation will be conducted on the use of supported metal complexes as an efficient gas separation method.
- A fundamental investigation of biological approaches to coal conversion will be started.
- New catalyst systems for low temperature water gas shift reactions will be developed for more efficient control of product gas compositions, e.g., low-cost hydrogen production.

The FY 1987 request of $968,000, is a reduction of $2,411,000 from the FY 1986 funding level. This will result in a completion in FY 1986 of all research relating to novel

gas separation techniques; and kinetics of coal gasification and devolatilization, including the development of models and experimental verification. In FY 1987, research will continue at a reduced level in the areas of fundamental chemistry and reaction mechanisms associated with mild gasification; and the chemistry of ash and slag from gasifiers.

	FY 1986 Approp.	FY 1987 Request	Net Change
Advanced process development	$ 5,229	$ 1,689	$ -3,540

The FY 1987 request for funds represents a reduction of $3,540,000 from the FY 1986 appropriations. This reduced funding is consistent with a redirection of these activities. This redirected effort now focuses on the support of studies specifically generating data required to establish the feasibility of advanced and novel techniques particularly suited for the application of coal gasification technology in the generation of alternate energy options from coal.

The major objectives of the activities being performed in advanced process development is the generation of a comprehensive technology data base needed for new gasifier concepts. Basic programs involving kinetics and fluid dynamics, thermochemistry and other fundamental concepts including advanced, sophisticated process chemistries, are all part of these high-risk, long-range research projects which have the potential for high payoff upon the successful completion of the experimental work.

In FY 1986, the Advanced Gasification Test Facility was operated and additional data was gathered and evaluated to conclude the development of advanced instrumentation concepts, the development of advanced gas cleanup devices and to define some of the basic concepts of coal gasification in entrained reactors. Innovative techniques (e.g., mild gasification) that have the potential to either increase gasifier yields or dramatically affect the comparative distribution of products produced during the gasification process were further explored and advances were made in gasifier development and application studies, when advanced, new feedstocks (e.g., pulverized, deep cleaned, coal-carbon dioxide mixtures) were used in short residence time, high rate gasifiers. The resulting products were used to develop techniques for the identification of improved processing concepts for increasing their range, and suitability as well as in reducing the cost of utilizing minimally treated pyrolysis products of coal for alternate fuels in advanced energy conversion systems.

Efforts were continued to examine the behavior of fluidized beds when operating under conditions of high temperature and high pressure and to examine the concept of using semi-volatile catalysts within the gasifier itself. These data along with other thermophysical property characteristics of liquid and gaseous mixtures were also used to verify a number of advanced gasifier/gasification process models.

In FY 1987, those efforts performed in FY 1986 to develop innovative techniques with the potential to either increase gasifier yields or dramatically affect the comparative distribution of products generated (i.e., gases, liquids, solids) during the gasification process will be evaluated and the most promising approaches used as a basis for continuing these studies. In addition, studies will be performed to identify and apply new techniques for the application of promising catalyst systems directly to coal as a feedstock or for use within the gasifier itself. The objective of this work will be to realize the potential that exists through this approach to significantly improve system processing flexibility, increase product yields and reduce costs.

Efforts will also continue on studies using coal based sorbents and zeolites in pressure swing adsorption for separation of gases as well as for the development of low cost permeable membranes for hydrogen separation. Studies on the characterization of char during devolatilization will be continued and studies on advanced staged, concurrent rapid rate reactors will be completed. Finally, theoretical studies on coal gasifiers and gasification systems will also be continued.

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	FY 1986 Approp.	FY 1987 Request	Net Change
Systems engineering concepts	$27,949	$ 1,373	$-26,576

The reduced level of funding requested for these activities in FY 1987, representing a reduction of $26,576,000 from the FY 1986 appropriation, is the direct result of completing several Proof-of-Concept (POC) and Reliability, Availability and Maintainability (RAM) studies in process development unit (PDU) and demonstration sized gasifiers as well as redirecting some studies away from engineering development efforts.

In general, the work being performed within the category of Systems Engineering Concepts is directed toward the continued development of integrated gasification systems, optimization of concepts for specific applications and achieving the full flexibility of the technology in generating the maximum number of alternate fuel forms from coal. With the completion of the PDU efforts, these studies will focus on the potentially promising concepts that are of a high-risk but which can generate data of direct support to the application of these gasifier systems.

In FY 1986, the evaluation and analysis of operational data that demonstrated the flexibility of the agglomerating ash, fluidized-bed gasification concept was completed. The problems that must be resolved to operate simplified integrated modular gasification systems (gasifiers, hot gas cleanup, particulate removal, etc.) for combined cycle power production were studied. Data generated during these efforts were essential in creating the incentives needed for industry to consider the continued development of such systems. These studies also provided the industrial sector with the data needed to evaluate the use of the ash agglomerating fluidized-bed gasifier for the production of power to convert all types of coal into alternate forms of gas and liquid fuels as well as chemical feedstocks. Work was also completed on the performance testing of the KILnGAS gasification facility. These studies generated significant amounts of data on the Reliability, Availability and Maintainability (RAM) characteristics of the concept of coal gasification. These data were required by the utility and industrial sectors to evaluate the potential and suitability of this concept for use in specific end-use applications. In addition, evaluation and development efforts on a hybrid gasifier concept being considered in the evaluation of new systems capable of optimizing the product yield for specific industry applications were completed. The component and instrumentation part of the systems engineering concepts effort was completed. The successful development of these system enhancement projects have generated data required in the design and construction of more economic and viable coal gasification facilities.

In FY 1987, the cooperative effort with the Gas Research Institute will continue with specific studies and engineering analyses performed on projects of interest to the joint objectives of the combined program. The fixed-bed gasifier at the Morgantown Energy Technology Center will be operated with the experimental emphasis on new methods of obtaining high percentage in situ and/or external sulfur removal to enhance the use of fixed-bed gasifiers using advanced hot gas cleanup concepts. The gasifier will be used to generate a source of "dirty" fuel gas for testing hot particulate removal and chemical and physical gas cleanup devices and the initial steps will be taken to identify and resolve the integration issues associated with the evaluation of a system suitable for the production of new fuels. The fundamental mechanisms leading to a determination of the potential of the zirconia solid state oxygen separator as an alternative to the very expensive cryogenic methods of producing oxygen also will be studied.

Environmental and engineering analyses	$ 2,113	$ 1,131	$ -982

The FY 1987 request for funds represents a reduction of $982,000 from the FY 1986 appropriation for this same activity. The reduced level of funding reflects the maturity of the data base for surface coal gasification in the area of environmental concern. Investigative studies on all aspects of coal gasification and its possible

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impact on the environment resulting from any siting activity mining effort, operation, effluent discharge, product preparation and distribution, etc., have been in progress for many years. These studies have been performed in gasification activities that range from bench scale through the demonstration-sized plant and have generated a very strong and comprehensive environmental data base. A continuing assessment of this data base will be performed to identify any omissions and to focus attention on any areas requiring further study.

Those projects required to generate any additional data, resolve any remaining issues and to develop the technology required to reduce to a minimum any potential environmental impact associated with the implementation of any gasification system on a commercial scale are included as part of this activity.

In FY 1986, studies performed to understand the environmental aspects of each of the processing units as well as the total integrated coal gasification process itself were performed. Enough data were generated to confirm the value of simulation models in making comparative evaluations of promising effluent management techniques and to evaluate "zero discharge" waste water management schemes. Promising results were obtained from studies performed to investigate the application and use of biological micro-organisms in the clean-up of trace organic contaminants in quench and process liquids. The ASPEN process model was demonstrated to be an effective tool for evaluation storage and usage of a wide range of gasification environmental data. Considerable amounts of environmental data were obtained from the operation of the Great Plains Coal Gasification Plant (GPCGP). These data were evaluated and entered into the data base. Work was continued on the compilation, assessment and correlation of the design data produced during DOE's support of the feasibility design and demonstration plant programs. The processed data was entered into the gasification technology data base. As part of this effort, a number of gasifier operational codes that had been under development for a number of years by several firms were evaluated, made compatible and entered into the software library available to process modeling activities.

In FY 1987, work will be performed to investigate process modifications in a coordinated effort with downstream cleanup work in fluidized and fixed-bed gasification systems required to reduce the generation of trace hazardous compounds. During the year, the results obtained during the operation of the GPCGP will be used to determine relationships between operational parameters, process efficiency and environmental impact. Earlier trends established at the bench-scale and supported at the PDU/pilot plant level will be compared with full commercial data to identify discrepancies, generate correlations and to identify areas of inadequate information (i.e., data needs). Finally, a study to investigate the fate of trace metals, hydrocarbons and alkalis during the generation and combustion of gaseous fuels from coal will be performed using laser-induced fluorescence instrumentation. These data are essential in developing and utilizing hot gas cleanup systems.

	FY 1986 Approp.	FY 1987 Request	Net Change
Great plains gasification project	$ 2,653	$ 437	$ -2,216

The funding request for the Great Plains Gasification Project (GPGP) in FY 1987 has been reduced by $2,216,000 below the amount of funds appropriated in FY 1986. This reflects a reduction in contract support of DOE's monitoring and management activities.

In FY 1986, the DOE's monitoring and management activities of the project were performed by the Acting Assistant Secretary for Fossil Energy, the Office of Oil, Gas, Shale and Coal Liquids, the Chicago Operations Office, the Grand Forks Project Office and the Morgantown Energy Technology Center.

On August 1, 1985, the Great Plains Gasification Associates partnership notified the government that their consortium intended to abandon the North Dakota facility and default on the $1.5 billion federal loan it received to build the plant. The Department

is presently studying sale or lease options for the future operation of this facility. The Department's request is to be utilized in the continued direction and monitoring of the Great Plains project.

FTE Staffing Request

Direct FTE's are funded by this budget activity and include Federal personnel directly engaged in in-house research at the Energy Technology Centers. Although all indirect FTE's are funded in the Program Direction and Management Support budget activity, those who support the planning, management, and contract technical direction functions for this activity are included here in order to provide a clearer indication of the total Federal workforce supporting this activity.

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DEPARTMENT OF ENERGY

FISCAL YEAR 1987 CONGRESSIONAL BUDGET REQUEST

FOSSIL ENERGY RESEARCH AND DEVELOPMENT

PETROLEUM RESEARCH AND DEVELOPMENT

VOLUME 6

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
SURFACE COAL GASIFICATION
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Advanced Research	Continued research on the fundamental chemistry of coal gasification and generic gasification methods to advance understanding of various processes. ($1,542)	Continued to investigate the fundamental chemistry of coal gasification, novel approaches to coal gasification such as new catalyst systems, and catalytic upgrading of synthesis gas to enhance hydrogen recovery. ($1,511)	Continue research, at a reduced level, on the fundamental chemistry and reaction mechanisms associated with mild gasification and investigate the parameters that control product yield distribution. ($593)
	Continued research on novel gas separation, cleanup, and processing techniques. ($703)	Completed investigation of novel approaches to gas separation, such as supported metal complexes and membranes. ($447)	No activity. ($0)
	Continued development, evaluation, and validation of computer models and made necessary measurements to predict and simulate fundamental physical and chemical phenomena occuring in gasification processes. Completed experimental work on high temperature fluid dynamics. ($439)	Completed the investigation of the kinetics of devolatilization and gasification of coal through development and experimental verification of computer models. ($840)	No activity. ($0)
	Conducted research on ash and slag chemical and physical properties. ($680)	Continued the investigation of the chemistry of ash and slag from coal gasifiers. ($581)	Continue research, at a reduced level, on the chemistry of ash and slag from coal gasifiers. ($375)

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SURFACE COAL GASIFICATION (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Advanced Process Development	Continued studies on rapid rate staged gasification processes that offer the capability of varying and optimizing product yields. ($983)	Continued studies on advanced, staged, concurrent, rapid rate reactors. Completed studies on approaches to utilization of semi-volatile catalysts, sulfur removal compounds within the gasifier and their potential to vary the product spectrum and/or provide more economical, environmentally responsive systems. ($480)	Complete studies on advanced staged, concurrent rapid rate reactors to enhance data base on rapid rate pyrolysis. Continue characterization of char during devolatilization. ($309)
	Continued investigation of physical and chemical gas separation/cleanup processes. ($1,121)	Continued efforts directed at identifying and determining the potential of new techniques for separation of complex gas mixtures to include selective removal of impurities. ($360)	Continue studies using coal based sorbents and zeolites in pressure swing adsorption for separation of gases. Continue development of low cost, highly selective permeable membranes for hydrogen separation. ($235)
	Completed shakedown and operational verification of all systems in the advanced gasification concepts facility and initiated test program plan activities on entrained beds and hot gas cleanup, utilizing prior year funding. ($0)	Continued operation of the advanced gasification concepts facility to generate data essential to advancing entrained gasification and hot gas cleanup technology. ($384)	Continue operation of the advanced gasification concepts facility to generate data essential to advancing entrained gasification and hot gas cleanup technology. ($192)
	Continued investigation of high pressure, high temperature fluidized bed gasification phenomena. ($344)	Completed investigation of high pressure, high temperature, fluidized-bed gasification interrelationships. ($264)	No activity. ($0)
	Continued efforts to identify and control contaminants present in effluents; initiated work on promising advanced concepts that may be used to remove such contaminants. ($492)	Completed studies on advanced concepts for coal gasification cleanup processes and investigated applications of new coal chemistry techniques. ($620)	No activity. ($0)

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SURFACE COAL GASIFICATION (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Advanced Process Development (cont'd)	No activity. ($0)	Issue a PRDA to universities to examine gasifier operating conditions in context of characteristics of selected high volatile coals known to produce higher yields of liquids to establish optimum product yields. ($480)	No activity. ($0)
	Continued theoretical studies of coal gasifiers and gasification systems to generate data needed for design of optimized systems/ technology data base. ($993)	Continued theoretical studies on coal gasifiers and gasification systems needed for design of an optimized systems/technology data base. ($445)	Continued theoretical studies on coal gasifiers and gasification systems needed for design of optimized systems. ($703)
	Continued studies to determine the effect of gasifier bed composition on gas components that are produced. ($443)	Completed studies on the interrelationship between gasifier bed composition and operational parameters on the composition of products produced. ($284)	No activity. ($0)
	No activity. ($0)	Begin studies on the use of advanced gasifier concepts, mild gasification techniques, pretreatment processes, new catalysts, processing chemistries, and their potential applications in the economic production, upgrading, and use of new fuel forms. ($1,912)	Redirect and continue essential studies leading to economic production, upgrading and use of new fuel forms. ($250)
Systems Engineering Concepts	Performed slip stream testing program at existing facilities to study performance of instruments, operating components and materials of construction. ($990)	Completed slip stream testing. ($255)	No activity. ($0)

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SURFACE COAL GASIFICATION (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Systems Engineering Concepts (cont'd)	Initiated the study of hybrid (gasification/combustion) reactors that permit optimization of product fuel forms (liquids, chars and gases) through evaluation of known concepts and through solicitation of industrial interests. ($492)	Completed identification, development and evaluation of hybrid gasifier/gasification concepts. ($384)	No activity. ($0)
	Investigated gasifier preformance and resulting yields, particularly condensible liquids and char to determine suitability for use in advanced heat engines. ($344)	Completed studies on gasifier performance and the resulting impact on yields of condensible liquids and char and began to determine their suitability for use in advanced heat engines. ($375)	Continue to investigate parameters controlling use of minimally cleaned gasifier coal products as fuels for advanced heat engines. ($50)
	Continued study of concepts and data needed to develop a solid state electrolyte oxygen separator. ($703)	Continued development of concepts and data for a solid state electrolyte oxygen separator. ($480)	Continue effort to develop more economical methods for production of oxygen in large quantities--advance the solid state zirconia system to the PDU stage of study. ($350)
	Completed the studies on composition, durability design and use of slagging refractories. ($148)	No activity. ($0)	No activity. ($0)
	Continued development of promising alternatives to system operating components that have high failure rates or high maintenance costs. ($705)	Completed development of promising alternatives to components, instruments, etc., that have high failure rates, capital costs or high maintenance costs. Continued development of materials to enhance capability in severe gasification conditions. ($577)	No activity. ($0)

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SURFACE COAL GASIFICATION (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Systems Engineering Concepts (cont'd)	Initiated studies on innovative techniques for essential in-line measuring instruments to determine process parameters/gas compositions essential to process control and evaluation. ($207)	Completed studies on innovative techniques for essential in-line measuring instruments to determine process parameters/gas compositions essential to process control and evaluation. ($432)	No activity. ($0)
	Initiated a high pressure study at bench scale to the study suitability of composite sorbents for cleanup of gas streams. ($1,229)	Completed the high pressure bench scale study to determine suitability of composite sorbents for cleanup of gas streams. ($200)	Utilize results of studies on composite sorbents, mixed metal oxides, catalysts, etc. to establish reaction mechanisms by which gasifier performance can be controlled through use of in-bed/coal-feed additives. ($200)
	Performed studies of the KILnGAS coal gasification system to determine key operational parameters. ($7,375)	Continued studies of KILnGAS coal gasification system to determine key operational parameters. ($14,336)	Complete studies of KILnGAS coal gasification system with $6,000 of prior year funding. ($0)
	Continued PDU work at the Waltz Mill facility on the study, development and evaluation of integrated gasification/hot gas cleanup/fuel use systems for utility applications. In addition, $3M of deferred funding was also utilized. ($6,392)	Completed PDU work at the Waltz Mill PDU on the study, development and evaluation of integrated gasification/hot gas cleanup/fuel use systems for utility applications. ($8,602)	No activity. ($0)
	Completed a cooperative research program on optimization of fixed-bed gasifiers for industrial use applications (the MIFGA effort). ($738)	No activity. ($0)	No activity. ($0)

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SURFACE COAL GASIFICATION (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Systems Engineering Concepts (cont'd)	Funds appropriated to complete studies on the U-Gas ash agglomerating process when operating at high temperatures and pressures were approved for deferral by Congress. ($1,475)	Funds deferred in FY 1985 were used to offset FY 1986 appropriations requirements. ($0)	No activity. ($0)
	No activity. ($0)	Reactivate fixed-bed gasifier at METC to generate flue gas to evaluate and develop advanced hot gas cleanup systems. ($874)	Continue key studies on integration of gasifiers/gasification technologies with other conversion systems to determine the most optimum configurations and on identification of problems requiring RAD effort to resolve. ($173)
	No activity. ($0)	Completed key studies on the integrated operation of gasifier hot gas (particulate removal and sulfur removal) systems and gas turbines to identify and solve RAD integration problems. ($1,434)	Continue the PDU effort exploring issues limiting the integration and development of gasifier/advanced hot gas cleanup systems/turbines for the production of power using prior year funding. ($0)
	Continued to provide engineering analyses and systems evaluation capability for joint DOE/GRI Coal Gasification Program utilizing FY 1984 funding. ($0)	Continued to provide engineering analyses and systems evaluation capability for joint DOE/GRI Coal Gasification Program utilizing FY 1984 funding. ($0)	Continue to provide engineering analyses and systems evaluation capability for joint DOE/GRI Coal Gasification Program through monitoring processes, review of technical data and economic assessments. ($600)
Environmental and Engineering Analyses	Performed slip stream studies at existing facilities on promising systems for effluent cleanup and control. ($846)	Completed slip stream studies on promising systems for effluent cleanup and control. ($192)	No activity. ($0)

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SURFACE COAL GASIFICATION (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Environmental and Engineering Analyses (cont'd)	Completed the study of toxicological characteristics of effluents as they are affected by process parameters. ($148)	Identified and developed process modifications that will reduce the generation of trace hazardous compounds. ($384)	Continue the development of process modifications that will reduce the generation of trace hazardous compounds. ($375)
	Initiated the study of novel approaches to use microorganisms for removing trace amounts of organic contaminants in waste water. ($106)	Continued the study of novel approaches to use microorganisms for removing trace amounts of organic contaminants in waste water. ($236)	Complete the study of novel approaches to use microorganisms for removing trace amounts of organic contaminants in waste water. (Prior year funding) ($0)
	Completed the studies on impact of zero effluent discharge requirements on facility cost and operational reliability and continued work on other environmental aspects of coal gasification. ($659)	Completed studies on the environmental aspects of coal gasification to include waste management, effluent control systems and the impact of gasification plant environment on worker health. ($346)	No activity. ($0)
	Explored innovative new techniques that have the potential to decrease the amount of water used in gasification through process modification and recycle. ($700)	Completed the investigation of promising techniques with the potential to decrease the amount of water used in gasification through process modification and recycle. ($236)	No activity. ($0)
	Continued development of analytical models to improve the quality of the data base and to increase the ability to analyze new systems. ($457)	Continued development of analytical models to improve the quality of the data base and to increase the ability of end user groups to analyze new systems. ($335)	Continue development of analytical models such that computer based systems analysis can be used to identify advanced gasifier systems --expand efforts to prepare environmental information for entry into the model. ($200)

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SURFACE COAL GASIFICATION (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Environmental and Engineering Analyses (cont'd)	Continued development, correlation and evaluation of gasification data for use in and improvements of the ASPEN process model. ($600)	Completed development, correlation and evaluation of gasification data for use in and improvements of the ASPEN process model. ($384)	No activity. ($0)
	No activity. ($0)	No activity. ($0)	Investigate new and novel methods for sampling and analyzing organics, sulfur species, nitrogen, trace elements, etc., and study ways to reduce toxicity of oils and tars. ($186)
	No activity. ($0)	No activity. ($0)	Initiate comprehensive environmental sampling and analysis of systems employing hot gas cleanup systems. ($200)
	No activity. ($0)	No activity. ($0)	Initiate the environmental assessment of those processes found suitable for production of new fuel forms. Make recommendations on areas of study needed to minimize the impact of those mild gasification processes that produce liquids derived from coal. ($170)
Great Plains	Continued management of the loan guarantee and the monitoring of the Great Plains project. ($3,000)	Continued management of the loan guarantee and the monitoring of the Great Plains project. ($2,653)	Continue management and monitoring of the Great Plains project as necessary. It should be noted that the Department is presently studying various options as to the future direction of this project. ($437)

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
LEAD TABLE
PETROLEUM

FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(Tabular dollars in thousands. Narrative material in whole dollars.)

	FY 1985 Appropriation	FY 1986 1/ Appropriation	FY 1987 Base	FY 1987 Request	Request vs Base
Advanced process technology (FE)					
Advanced exploratory research:					
Operating expenses	$ 4,380	$ 4,486	$ 4,486	$ 1,576	$ -2,910
Subtotal	4,380	4,486	4,486	1,576	-2,910
Arctic and offshore research:					
Operating expenses	984	1,037	1,037	235	-802
Subtotal	984	1,037	1,037	235	-802
Total					
Operating expenses	5,364	5,523	5,523	1,811	-3,712
Advanced process technology	$ 5,364	$ 5,523	$ 5,523	$ 1,811	$ -3,712
Staffing Total FTE's: Direct	0	0	0	0	0
Indirect	16	15	15	5	-10

1/ Adjustments to the FY 1986 Appropriation are shown on the table on the following page.

Authorization: Section 4, P.L. 93-577
Section 301, P.L. 95-91

Department of Energy

FY 1987 Congressional Budget Request

Adjustments to FY 1986 Appropriations

	FY 1986 Conference	General Reduction	G-H-R Reduction	Total
Advanced process technology (FE)				
Advanced exploratory research:				
Operating expenses	$4,692	$-23	$-183	$4,486
Subtotal				
Arctic and offshore research:				
Operating expenses	1,086	- 7	- 42	1,037
Subtotal, Advanced Process Technology	5,778	-30	-225	5,523
General Reduction:				
Operating Expenses	-30	30	-	-
Total, Advanced Process Technology	$5,748	-	$-225	$5,523
Operating Expenses	5,748	-	-225	5,523

Summary of Changes

FY 1986 Appropriation enacted	$ 5,523
Program increases and decreases:	
Advanced Exploratory Research	
o Complete ongoing extraction technology research and terminate the development of advanced instrumentation	-520
o Complete ongoing fuels testing research and identification of processing needs activity and suspend further work	-883
o Reduce activities in extraction related studies on subsidence and aquifer contamination and suspend further work	-514
o Complete ongoing MEOR technical feasibility analysis studies	-566
o Reduce activities in fundamental petroleum chemistry, thermodynamics, geoscience, and physical properties of petroleum and synthetic crudes	-427
Subtotal	-2,910
Arctic and Offshore Research	
o Reduce activities in Arctic energy data base development and maintenance	-604
o Complete ongoing fundamental ice research	-198
Subtotal	-802
FY 1987 budget request	$ 1,811

Advanced process technology:

Goals/Objectives:

The Advanced Process Technology (APT) program serves the dual purpose of exploring new concepts with the potential to achieve quantum increases in efficiency and significant cost reduction of recovery techniques for oil, gas, and oil shale and to conduct fundamental research that is relevant to oil, gas, and oil shale recovery, where the experimental procedure, method being developed, or item of concern is more important than the resource being investigated.

There are two goals within the APT Program. These are:

- To pursue the fundamental research relevant to oil, gas, and shale recovery, i.e., development of the tools and techniques to measure and predict important properties and phenomena, and to obtain the fundamental data critical to these recovery processes.
- To provide the proper environment to conduct research and to pursue application of new frontiers of science and/or as yet unexplored new concepts to achieve quantum increases in recovery efficiency for oil, gas, and shale resources.

During the APT program planning process, an evaluation of the needs of oil, gas, and shale technologies is conducted. Based on this evaluation a prioritized list of research needs is compiled according to the potential crosscut benefits to oil, gas and shale programs.

As to the second goal of the APT program, the intent is to evaluate new methods of resource extraction that offer the potential for very significant increases in energy efficiency, more favorable economics, or environmental benefits. Emphasis is placed on soliciting ideas from outside the Department of Energy in order to assure that the program takes advantage of the best ideas that the nation and international sources have to offer. After the feasibility of the idea has been determined it can then be transferred to the relevant technology program for development or if warranted be

research may be terminated. An example of this transfer process is the microbial enhanced oil recovery (MEOR) thrust prior to FY 1987. It was under the auspices of the APT program where it was determined that the method appears feasible and warrants an increased research effort. Thus in FY 1987 MEOR is being transferred to the Enhanced Oil Recovery program for implementation.

FY 1986 Accomplishments:

FY 1986 accomplishments include:

- Complete technical feasibility analyses conducted by four universities and define a program of research addressing research needs requisite to applying microbial EOR in a production mode.
- Continue fundamental petroleum chemistry research focusing on physical and chemical characterization studies of heavy oil; thermodynamic measurements; shale oil and tar sands bitumen studies and fuel storage and handling.
- Complete ongoing extraction technology research focusing on reservoir characteristics and advanced instrumentation development.
- Complete ongoing fuels testing research, correlation of fuels composition and processing needs, and predictive models relating process to composition.
- Continue ongoing extraction related studies which will focus on the mitigation of aquifer damage and subsidence problems.
- Continue the update and maintenance of the Arctic/offshore oil and gas research data base.
- Complete ongoing fundamental ice research to characterize size, composition, degree of consolidation, temperature and salinity profiles.

Budget Request By Subactivity:	FY 1986 Approp.	FY 1987 Request	Net Change
Advanced exploratory research	$ 4,486	$ 1,576	$ -2,910

The reduction of $2,910,000 from the FY 1986 funding level reflects a focusing of research at the National Institute for Petroleum and Energy Research and discontinuation of university and national laboratory efforts in geoscience, chemical EOR, and reservoir diagnostics. All efforts conducted in FY 1986, with the exception of fundamental petroleum, geoscience, aquifer contamination, and chemistry research were completed. More specifically, in FY 1986, activities in microbial enhanced oil recovery were brought to a close in regard to investigating the technical feasiblity of the concept. A program was developed to define research needs that must be addressed prior to application of microbial enhanced oil recovery in a production mode. The National Institute for Petroleum and Energy Research (NIPER) continued a program of research to establish the chemical, physical and thermodynamic properties of heavy oil and syncrude feedstocks essential to defining problem compounds and properties requisite to introducing them into the present infrastructure; and developing analytical models correlating alternate crude/fuel composition to processing and utilization (combustion properties). Also a planned 3-year university/industry research effort in support of geosciences and chemical flooding related to enhanced oil recovery (initiated under a FY 1985 PRDA) was brought to completion in FY 1986 as were national laboratory efforts to develop diagnostics to measure key reservoir parameters in-situ.

In FY 1987, research will continue at NIPER in fundamental chemistry, physics and thermodynamics on heavy petroleum, tar sands bitumen, and oil shale feedstocks in an attempt to focus efforts and benefit from the government/industry interface available through this institution. Included in this research will be the development of more practical analytical tools and techniques for the analysis of the heavier ends. Under the joint U.S./Venezuela agreement, work will continue on the characterization of heavy crude oil. This effort was redirected during FY 1986 to emphasize developing the improved means of characterization rather than continuing to determine the properties of specific crudes, such as the Venezuelan Cerro Negro heavy oil. Under the joint U.S./Israel agreement, work will continue on the chemical aspects of acquifer contamination.

	FY 1986 Approp.	FY 1987 Request	Net Change
Arctic and offshore research	$ 1,037	$ 235	$ -802

In FY 1986, efforts continued in establishing consolidated, coordinated, central arctic oil and gas research information and data base systems as recommended in a National Petroleum Council study on arctic development. This study identified the need for a coordinated energy related information/technology data system where the myriad of industry, academia and government agencies could access and input information. Research was also conducted to establish the characteristics of the ice islands and ice ridges which pose a hazard to offshore structures.

In FY 1987, an annotated bibliography relevant to energy development will be prepared; the key element of the Arctic and Offshore Research Information System will reflect the state-of-the-technology as of FY 1987. All other planned technology base activities will be suspended or be the subject of a cooperative R&D venture pool project, e.g., cooperative work with the State of Alaska and Arctic Ocean rim countries.

FTE Staffing Request

Direct FTE's are funded by this budget activity and include Federal personnel directly engaged in in-house research at the Energy Technology Centers. Although all indirect FTE's are funded in the Program Direction and Management Support budget activity, those who support the planning, management, and contract technical direction functions for this activity are included here in order to provide a clearer indication of the total Federal workforce supporting this activity.

DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
ADVANCED PROCESS TECHNOLOGY
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Advanced Exploratory Research	Performed actual field testing of promising microbes to enhance oil recovery. Work was performed at various universities. ($500)	Completed feasibility analysis phase of research into the novel use of micro-organisms to enhance oil recovery; research activities include field testing of promising microbes, nutrient requirements, transport characteristics, and oil release mechanisms. Work was performed at various universities. ($566)	Activity transferred to EOR program for further development. ($0)
	Continued to provide fundamental characterization data on heavy crudes and syncrudes. Work was performed by various universities and NIPER. ($1,905)	Continued fundamental petroleum, geoscience and chemistry research focusing on physical and chemical characterization studies of heavy oil; thermodynamic measurements; shale oil and tar sands bitumen studies and fuel storage and handling. Work was performed by various universities and NIPER. ($1,927)	Continue fundamental petroleum, geoscience and chemistry research focusing on physical and chemical characterization studies of heavy oil; thermodynamic measurements; shale oil and tar sands bitumen studies and fuel storage and handling. Work will be performed by NIPER. ($1,500)
	Continued advanced extraction instrumentation development for reservoir characterization and in situ monitoring. Work was performed by various national labs. ($750)	Completed ongoing extraction technology research focusing on reservoir characteristics and development of advanced instruments to measure thermal fronts, natural fractures in reservoirs, and reservoir heterogenities. Work was performed by various national labs. ($520)	No activity. ($0)

ADVANCED PROCESS TECHNOLOGY (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Advanced Exploratory Research (cont'd)	Continued fuels/engine testing research on air emissions. Work was performed by NIPER. ($975)	Completed fuels testing research, correlation of fuels composition and processing needs, and predictive models of process to composition. Work was performed by NIPER. ($883)	No activity. ($0)
	Completed fuels stability cooperative research with the Navy ($250)	No activity. ($0)	No activity. ($0)
	No activity. ($0)	Continued studies which will focus on the mitigation of aquifer damage. Completed extraction related studies focusing on subsidence problems, separation of toxic metals from heavy crudes, and the investigation of volatilization of organic compounds from synfuels waste waters. Work was performed by various national labs, universities and WRI. ($590)	Continue extraction related aquifer contamination studies. ($76)
Arctic and Offshore Research	Updated and maintained the Arctic/offshore oil and gas research data base. Work was performed by industry. ($523)	Continued the update and maintenance of the Arctic/offshore oil and gas research data base. Work was performed by industry. ($839)	Continue the Arctic/offshore oil and gas research data base. ($235)
	Continued fundamental research on ice mechanics and seafloor stability. Work was performed by various universities and federal laboratories. ($266)	Completed fundamental ice research to characterize size, composition, degree of consolidation, temperature and salinity profiles. Work was performed by various universities and federal laboratories. ($198)	No activity. ($0)

ADVANCED PROCESS TECHNOLOGY (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Arctic and Offshore Research (cont'd)	Completed gathering of field data from Arctic deployment of SDMS. Work was performed by various national labs. ($195)	No activity. ($0)	No activity. ($0)

DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
LEAD TABLE
PETROLEUM
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(Tabular dollars in thousands. Narrative material in whole dollars.)

	FY 1985 Appropriation	FY 1986[1/] Appropriation	FY 1987 Base	FY 1987 Request	Request vs Base
Enhanced oil recovery (FE)					
Heavy oil:					
Operating expenses	$ 2,557	$ 2,756	$ 2,756	$ 608	$ -2,148
Subtotal	2,557	2,756	2,756	608	-2,148
Light oil:					
Operating expenses	7,965	7,381	7,381	3,876	-3,505
Subtotal	7,965	7,381	7,381	3,876	-3,505
Tar sands:					
Operating expenses	1,180	1,317	1,317	...	-1,317
Subtotal	1,180	1,317	1,317	...	-1,317
Total					
Operating expenses	11,702	11,454	11,454	4,484	-6,970
Enhanced oil recovery	$11,702	$11,454	$11,454	$ 4,484	$ -6,970
Staffing Total FTE's: Direct	6	6	6	3	-3
Indirect	17	17	17	10	-7

1/ Adjustments to the FY 1986 Appropriation are shown on the table on the following page.

Authorization: Section 4, P.L. 93-577
Section 301, P.L. 95-91

Department of Energy

FY 1987 Congressional Budget Request

Adjustments to FY 1986 Appropriations

	FY 1986 Conference	General Reduction	G-R-H Reduction	Total
Enhanced oil recovery (FE)				
Heavy Oil:				
Operating expenses.....	$ 2,886	$-17	$-113	$2,756
Light Oil:				
Operating expenses.....	7,721	-38	-302	7,381
Tar sands:				
Operating expenses.....	1,379	- 8	- 54	1,317
Subtotal, Enhanced Oil Recovery (FE).....	11,986	-63	-469	11,454
General Reduction:				
Operating Expenses.....	-63	63	-	-
Total, Enhanced Oil Recovery (FE)	$11,923	-	$-469	$11,454
Operating Expenses.....	11,923	-	-469	11,454

Summary of Changes

FY 1986 Appropriation enacted	$11,454
Program increases and decreases:	
Heavy Oil	
o Complete national laboratory and university studies on basic oil mobilization and EOR process mechanisms and focus research at NIPER	-2,140
Light Oil	
o Complete university research studies on chemical flooding and focus efforts at NIPER	-3,505
Tar Sands	
o Discontinue laboratory/bench scale efforts to investigate thermal recovery kinetics and mechanisms and to identify promising recovery concepts.	-1,317
FY 1987 budget request	$ 4,484

Enhanced oil recovery:

Goals/Objectives:

The goal of the Enhanced Oil Recovery (EOR) program is to conduct generic technology base R&D activities; develop fundamental knowledge that can lead to improved and new process concepts; and to assist industry in obtaining a better understanding of the mechanisms and behavior of advanced and novel EOR processes for the recovery of presently unrecoverable light oil, heavy oil and tar sand resources.

Enhanced Oil Recovery (EOR), often used synonomously with Tertiary Oil Recovery is the term used for recovery techniques applied after conventional means are employed or where conventional means are not effective. Conventional methods include primary recovery where natural, in situ drive mechanisms are utilized to produce the oil, or secondary water flood techniques are used to displace additional oil. Enhanced recovery or tertiary oil recovery methods usually represent the third attempt to recover the otherwise unrecoverable oil, except for heavy oil and tar sand reservoirs where EOR technologies may have to be applied from the very beginning.

One of the most comprehensive reports on the future of EOR in the United States was recently completed by the National Petroleum Council (NPC) at the request of the Secretary. The study points out that only 27% of all the oil discovered in the United States was produced (130 billion barrels) and that only 6% remains to be produced with conventional technologies (28 billion barrels). This leaves 323 billion barrels or 67% of the otherwise unrecoverable oil as the target for EOR. This oil remains out there, not waiting to be discovered but in places we know, in fields that are opened, but trapped in geology and by forces that are still beyond the grasp of today's production technology.

The NPC study recommends a number of research areas in EOR and states in the transmittal letter to the Secretary that "only through continued process research and field testing with both industry and government support, can the large volume of hydrocarbons discussed in the report be produced." Using today's EOR knowhow, the NPC report concludes that 14.5 billion barrels--the equivalent of about half our current recoverable reserves--could be added to the domestic crude oil supply. Further, NPC concludes that advances in technology could double that amount. This still leaves more than 300 billion barrels of oil in the ground.

Because of the present world energy situation and restructuring of the oil industry, exploration for new reserves has dropped off, particularly in the domestic arena. But

even in the recent past when exploration was at a peak, reserves were being added at a rate far below that previously experienced, and the average size of reservoirs discovered was found to be declining rapidly. Overall, domestic production has been on the decline for 15 years with some states experiencing serious economic consequences, because of drastic reductions in production. This only emphasizes the importance of relying on existing, but currently unrecoverable, oil resources and new technologies to recover that oil. Also, from a purely strategic point of view, EOR can help fill the oil supply shortfall after the strategic rererve runs out and before synthetic fuels make measurable impact on oil supply.

Fundamental research envisioned under the EOR program expects to look at the problem as a whole and will attempt to provide solutions to discrete research requirements which can then become the necessary building blocks for innovative process development by the industry. The focus of the EOR program is thus based on obtaining a clearer understanding of the scientific processes through long-range technology base research.

The U.S. does have considerable heavy oil (approximately 100 billion barrels) and tar sand resources (54 billion barrels) but our neighbors to the north and south have orders of magnitude larger in-place rusources. Canada has an estimated 1.2 trillion barrels contained in their tar sands and Venezuela has 1 to 4 trillion barrels in their heavy oil deposits. Mexico is still determining the magnitude of their petroleum deposits (both heavy and light oil) but they are known to be vast. It is therefore important from a strategic standpoint to develop efficient, effective and economic recovery technologies for these resources. The fact that Canada, Venezuela and Mexico have mutual interests in recovery research affords us the opportunity to leverage our resources through cooperative research efforts. We do in fact have active and mutually beneficial agreements in place with these countries and are task sharing research on defined critical needs.

The specific objectives of the EOR program are to:

- Conduct fundamental research into the behavior of light oil EOR processes ...h as micellar-polymer and carbon dioxide flooding with mobility control for significantly higher recovery efficiency.
- Develop a better understanding of heavy oil EOR processes such as steam flooding, and the complex chemical/physical in situ mechanisms by which oil is mobilized and recovered efficiently.
- Evaluate and develop new concepts for in situ recovery of bitumen from U.S. tar sands deposits.
- Provide technical support and conduct environmental research pertaining to hazards in use of chemicals in light oil recovery and to combustion products from thermal recovery of heavy oils.
- Continue technology transfer activities with government agencies and industry.
- Evaluate environmental impediments or concerns which could constrain realization of EOR goals.

FY 1986 Accomplishments:

- Continued joint research with Venezuela and Mexico on heavy oil characterization, thermal recovery evaluation, subsidence prediction and reservoir modeling.
- Phased out university investigations into the kinetics of oxygen-enriched in situ combustion and National Laboratory research into the generation and stability of foam in reservoirs.
- Continued fundamental studies of surfactant behavior in EOR concepts and applications.
- Continued studies of geologic heterogeneities and other characteristics on EOR process shortcomings.
- Conducted basic studies of rock-fluid interaction phenomena and behavior.
- Continued studies of CO_2 displacement mechanisms and viscous channeling and mobility control concepts.

- Continued joint test program with Canada for assessing advanced concepts of remote tracking of thermal fronts for control of in situ combustion process of tar sands recovery, and cooperative development of methodology for tar sand resource and bitumen analysis.

Budget Request By Subactivity:	FY 1986 Approp.	FY 1987 Request	Net Change
Heavy oil	$ 2,756	$ 608	$ -2,148

FY 1987 funding for this subprogram is $608,000, a reduction of $2,148,000 from the FY 1986 funding level. This reduction will result in the following:

- Completion of research on in situ combustion reaction kinetics and variables in alkaline flooding in EOR.
- Completion of the remaining joint research with Venezuela and Mexico on novel heavy oil recovery processes.

Heavy oil (10^{0}-20^{0} API gravity) makes up an estimated one-third of the U.S. petroleum resource, or about 100 billion barrels. This heavy oil is very viscous, somewhat like molasses, and hence moves very slowly in the reservoir. For this reason, very little heavy oil is produced during primary recovery, and enhanced recovery techniques are required for further production. The most common EOR methods are targeted towards the reduction of viscosity of the heavy oil in place so that it can flow easily through the reservoir. Current technologies consist of applying heat to the reservoir through injection of steam or by in-situ combustion.

About 450,000 barrels of heavy oil is produced daily (mostly in California) using thermal recovery methods. Despite this apparent success, experts agree that the potential for heavy oil recovery is much larger (NPC Study on EOR, 1984). The main problem in thermal recovery is that of efficient displacement of the oil. Because of its light weight and very low viscosity, steam tends to bypass a large portion of the reservoir and breaks through to the producing wells. Research is required on modifying the flow behavior of steam which can result in greatly improved displacement efficiency. Materials are needed which can withstand the high temperature, pressure, and the dynamics of flow through the reservoir rocks. Certain chemical additives are proving to be useful in yet to be fully understood ways in improving steam displacement efficiency in selected reservoirs. In-situ combustion processes are more complex and still require a great deal of basic research to obtain a complete understanding of its subsurface behavior.

Certain heavy oils have acidic components that can react with alkaline chemicals to form surfactants in place. Alkaline chemicals such as sodium hydroxide can thus be used to initiate an in-situ surfactant flood. Further understanding of the reactions is necessary before this method can be applied with reasonable predictability.

The EOR heavy oil research program is mainly focused towards significantly improving the displacement efficiency of thermal recovery processes. To achieve this, research in modification of steam flow behavior, mobility control, chemical additives and kinetics of in-situ combustion will be required. Basic research efforts in use of alkaline chemicals for surfactant flooding will also be needed. As in the case of light oils, methods beyond those presently conceived will be required to recover much of the heavy oil. Thus an essential element of the Heavy Oil subprogram will be to explore new concepts for producing this remaining oil.

To address the vast amount of residual oil remaining even after applying the presently conceived advanced case technologies requires new approaches. Microbial EOR (MEOR) is one such approach, i.e., the use of micro-organisms to lower viscosity, develop miscible gases, etc., for displacement of the residual oil. Preliminary concept feasibility analyses have been done under the APT program. The potential has been established and

the effort transferred to the EOR program to begin the research toward developing MEOR systems concepts. Also, to address the more challenging complex reservoir conditions associated with the bulk of the oil remaining, alternate strategies to affect more control over the reservoir will be required than are possible with presently conceived systems.

As mentioned previously, the worldwide resources of heavy oil are enormous, especially in neighboring countries such as Canada, Mexico and Venezuela. Active and mutually beneficial cooperative research conducted in FY 1986 and previous years will be continued in FY 1987 with these countries in critical areas if such research competes successfully for funds under the Oil, Gas and Shale Cooperative R&D Venture Pool.

In FY 1986, heavy oil research included theoretical studies of multiphase fluid flow using steam with foam for mobility control, physical and computer simulation of steam with additives, kinetics of oxygen-enriched in-situ combustion, and continuation of research with Venezuela and Mexico.

In FY 1987, heavy oil research will be focused at the National Institute for Petroleum and Energy Research (NIPER). Taking advantage of the government/industry interface afforded through this institution, work will include the following:

- Identification of additives for improving thermal recovery methods and investigation of the mechanisms to enable design of improved techniques.
- Use of physical models and mathematical simulation to evaluate steam flooding and in-situ combustion in terms of kinetics, rheology, and displacement process.

	FY 1986 Approp.	FY 1987 Request	Net Change
Light oil	$ 7,381	$ 3,876	$ -3,505

FY 1987 funding for this subprogram is $3,876,000, a reduction of $3,505,000 from the FY 1986 funding level. The effect of this reduction will be the phasing out of basic research and pursuit of novel extraction concepts studies performed at several universities and National Laboratories.

Light oil (over 20° API) constitutes the largest percentage of the domestic crude oil resource--with approximately 230 billion barrels remaining in the ground as a target for EOR. There exist two core technologies for the enhanced production from light oil reservoirs: chemical flooding and miscible gas flooding.

Chemical flooding techniques involve the injection of surfactants in the target formation to reduce surface tension and ionic bonding between the residual oil and connate water and residual oil and sedimentary rock surfaces. A polymer slug is injected behind the surfactant to drive the fluid through the formation. In the laboratory, high recovery efficiencies are realized. However, in the field the results have for the most part been disappointing and unpredictable. The mechanisms that appear to cause the erratic and inefficient performance in the field relate to chemical and physical breakdown of the surfactant and polymers under formation pressures, temperature, high salinity and complex chemical composition; to adsorption and absorption of the surfactants; and to non-uniform flow behavior. Development of predictable, efficient and economical chemical flooding EOR technologies require a thorough understanding of the rock/fluid interactions and identification of surfactants and polymers compatible with the range of reservoir conditions encountered. Industry and DOE, under the EOR program, have conducted research in the past to address the problems associated with this technology. Recent and continuing DOE efforts will be focusing on the long-term, more fundamental research to build an analytical base as recommended by the NPC study.

Miscible gas (CO_2) recovery involves the injection of CO_2 into the formation under pressure. The CO_2 dissolves into the residual oil in the reservoir and works as a solvent to reduce viscosity and enhance flow characteristics. It is quite effective where it makes contact with the residual oil. Unfortunately, CO_2 moves rapidly through the formation because of its low viscosity relative to the formation fluids. The result is low sweep efficiency with the gas following the path of least resistance. Research by industry and DOE has therefore focused on developing mobility control methods, e.g., the addition of chemicals (such as foaming agents) to increase viscosity and enhance sweep efficiency. As in the case of chemical flooding, the DOE work is fundamental to provide an analytical base for industry efforts.

In FY 1986, light oil research activities included fundamental studies of surfactant properties and geologic parameters as they affect chemical flooding, continuation of research in phase behavior and viscous fingering phenomena in miscible gas flooding and comprehensive post-project analysis and updating and documenting of six process models.

The FY 1987 budget will allow continuation of NIPER's fundamental research into the recovery mechanisms and physical and chemical phenomena which hold the residual oil in the reservoir and prevent displacement. Work will include: investigations of polymer rheology and stability at elevated temperatures; effects of pore size on injectivity; absorption behavior of surfactants; the relationship between electrical properties and stability of colloidal surfactant systems; and the fundamental chemistry of copartitioning alcohol/surfactant systems. NIPER will also continue its studies of nitrogen and CO_2 gas flooding concepts, both miscible and immiscible, with emphasis on displacement mechanisms, mobility control, and the development of improved screening criteria. Microbial EOR, previously part of the APT program will now be a part of the EOP program and be addressed under the NIPER cooperative agreement. Similarly, METC will continue laboratory core testing of CO_2-surfactant-water foam systems of mobility control and basic CO_2 process technique assessments using its innovative miscible black oil model. Post-test analysis and process evaluation will be completed for the recently completed, cost-shared field test of micellar polymer EOR.

	FY 1986 Approp.	FY 1987 Request	Net Change
Tar sands	$ 1,317	$ ...	$ -1,317

No funds were requested in FY 1987 for this subprogram. All activities, except previously funded, tasx shared, U.S./Canadian basic tar sand research activities, will be completed in FY 1986.

Tar sand bitumen (less than 10° API) is a semi-solid, bituminous substance similar to asphalt or resin. It is totally immobile in the reservoir and therefore must either be mined and processed at the surface as in Canada, or heated in situ as in heavy oil recovery. Domestic tar sand resources are estimated at 54 billion barrels, however, currently there is no commercial production from these deposits.

Canada, however, produces over 200,000 BPD of bitumen and has an ongoing research program in tar sands. Although its commercial operations are largely surface processing, research emphasis is swinging toward in situ recovery in preparation for the day when its easily mined deposits run out. The surface processes developed in Canada serve as a starting point for design of technologies compatible with the estimated 15-20% of our tar sands amenable to mining and surface processing.

In FY 1986, DOE tar sand research focused on the development of concepts of recovery principally at the Western Research Institute (WRI) under an initial cooperative agreement expiring at the close of FY 1986, using small scale tube reactors and unique block test apparatus (allowing tests on 2x2x6 foot consolidated tar sand samples) to investigate in situ thermal recovery scenarios and the effect on product yield and quality and waste stream pollutant species and concentrations. A limited effort

conducted at the University of Utah to explore surface process technologies compatible with major U.S. tar sand deposits and to examine techniques for efficient separation of bitumen from the process fluids was similarly phased out. In addition, through the Office of the Canadian Federal Government and the Provinces of Alberta and Saskatchewan, Canada has continued to extend and fund cooperative research endeavors with DOE in tar sand research in the development of steam with additives technology and in situ mechanisms to enhance sweep efficiency; and in development and field testing of a cost effective remote thermal front tracking capability.

In FY 1987, basic tar sand research activities will be limited to previously funded, task shared, U.S./Canadian activities. These research activities could be supplemented by funds under the oil, gas and shale cooperative R&D venture pool.

FTE Staffing Request

Direct FTE's are funded by this budget activity and include Federal personnel directly engaged in in-house research at the Energy Technology Centers. Although all indirect FTE's are funded in the Program Direction and Management Support budget activity, those who support the planning, management, and contract technical direction functions for this activity are included here in order to provide a clearer indication of the total Federal workforce supporting this activity.

DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
ENHANCED OIL RECOVERY
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Heavy Oil	Continued evaluation of additives for improving steamflood, in situ combustion, and CO2/N2 injection EOR performance. ($1,247)	Continued studies of multiphase fluid flow using steam with foam for mobility control, foam generation and stability, and downhole steam quality. ($1,475)	Continue studies of steam additive mechanics and variables affecting mobility control and sweep efficiency. ($608)
	Conducted cooperative international research and seminars. ($580)	Continued joint research with Venezuela and Mexico on heavy oil characterization, thermal recovery evaluation, subsidence prediction and reservoir modeling. ($561)	Complete remaining joint research with Venezuela and Mexico using previous EOR technical base funds. ($0)
	Continued investigations of the role of clays, high temp materials, and alkalines in EOR applications. ($730)	Phased out investigation of kinetics of oxygen-enriched in situ combustion and research on the role of alkalines in EOR. ($720)	Complete, utilizing prior year funding, final report on variables in alkaline flooding in EOR. ($0)
Light Oil	Continued fundamental studies of surfactant behavior in EOR concepts and applications. ($1,964)	Continued fundamental studies on surfactant behavior in EOR concepts and applications. ($1,818)	Investigate high temperature, stable polymer systems and continue fundamental surfactant studies. ($1,150)
	Conducted post-field test analyses of EOR trials and continued studies of geologic heterogeneities and other characteristics on EOR process shortcomings. ($1,651)	Conducted post-field test analyses of EOR trials and continued studies of geologic heterogeneities and other characteristics on EOR process shortcomings. ($1,537)	Complete post-field test analyses of EOR Trials and continue reduced studies of geologic heterogeneities and other characteristics on EOR process shortcomings. ($1,100)
	Formerly part of APT program.	Formerly part of APT program.	Continue environmental study of microbial EOR processes. ($100)

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ENHANCED OIL RECOVERY (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Light Oil (cont'd)	Conducted basic studies of rock-fluid interaction phenomena and behavior. ($1,550)	Conducted basic studies of rock-fluid interaction phenomena and behavior. ($1,393)	Conduct basic multi-phase flow wettability studies to understand EOR process mechanisms. ($700)
	Initiated novel extraction EOR concept studies. ($1,500)	Phased out university basic and novel extraction concept studies. ($1,441)	No activity. ($0)
	Continued basic research in CO2 mobilization of oil, mobility control, phase behavior and viscous channeling phenomena in gas miscible flooding EOR. ($1,300)	Continued studies of CO2 displacement mechanisms including viscous channeling and mobility control concepts. ($1,192)	Continue studies of CO2 and other gas flooding concepts with emphasis on mobility control. ($826)
Tar Sands	Explored fundamental concepts of bitumen recovery using steam tube and block test laboratory apparatus. ($500)	Phased out laboratory tube and block reactor test of recovery process relationships for use in predictive model formulation for tar sands recovery. ($777)	No activity. ($0)
	Continued cooperative research with Canada on tar sands characterization and additives for steam flooding, and initiated novel in situ process monitoring research. ($380)	Continued joint empirical test program with Canada for assessing advanced concepts of remote tracking of thermal fronts for control of in situ combustion process of tar sands recovery, and cooperative development of methodology for tar sand resource and bitumen analysis. ($411)	Complete/monitor remaining cooperative research with Canada which was previously funded in EOR technical base utilizing prior year funding. ($0)
	Continued process development and environmental mitigation activities. ($300)	Completed fundamental process chemistry and environmental studies. ($129)	No activity. ($0)

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
LEAD TABLE
PETROLEUM
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(Tabular dollars in thousands. Narrative material in whole dollars.)

	FY 1985 Appropriation	FY 1986 1/ Appropriation	FY 1987 Base	FY 1987 Request	Request vs Base
Oil shale (FE)					
Oil shale technology base:					
Operating expenses	$ 8,728	$ 8,447	$ 8,447	$ 3,078	$ -5,369
Subtotal	8,728	8,447	8,447	3,078	-5,369
Environmental mitigation:					
Operating expenses	5,900	3,689	3,689	517	-3,172
Subtotal	5,900	3,689	3,689	517	-3,172
Total					
Operating expenses	14,628	12,136	12,136	3,595	-8,541
Oil shale	$14,628	$12,136	$12,136	$ 3,595	$ -8,541
Staffing Total FTE's: Direct	10	13	13	12	-1
Indirect	7	8	8	8	0

1/ Adjustments to the FY 1986 Appropriation are shown on the table on the following page.

Authorization: Section 4, P.L. 93-577
Section 301, P.L. 95-91

Department of Energy

FY 1987 Congressional Budget Request

Adjustments to FY 1986 Appropriations

	FY 1986 Conference	General Reduction	G-R-H Reduction	Total
Oil Shale (FE)				
Oil shale technology base:				
Operating expenses.....	$ 8,839	$-47	$-345	$8,447
Environmental Mitigation				
Operating expenses.....	3,860	-20	-151	3,689
Subtotal, Oil Shale (FE)	12,699	-67	-496	12,136
General Reduction:				
Operating Expenses	-67	67	-	
Total, Oil Shale (FE)	$12,632	-	$-496	$12,136
Operating Expenses.....	12,632	-	-496	12,136

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Summary of Changes

FY 1936 Appropriation enacted	$12,136
Program increases and decreases:	
Oil Shale Technology Base	
o Reduced specific eastern oil shale research	-472
o Discontinue further development of ASPEN codes specific to oil shale systems analysis	-122
o Reduce laboratory studies of reference shale retorting and modeling for solids recycle systems	-991
o Discontinue in situ process and fragmentation model development	-2,834
o Defer further activity in oil shale extraction research	-956
o Continue development of the data base	+6
Subtotal	-5,369
Environmental Mitigation	
o Discontinue studies to develop siting methodology	-376
o Reduce environmental data base activities	-94
o Discontinue research on nitrogen emissions and sulfur capture in solids-recycle retort systems	-192
o Reduce real-time emissions measurements consistent with reduced reference shale retorting studies in moving beds and in in situ simulating laboratory retorts, and defer further studies of critical questions associated with spent shale disposal	-2,510
Subtotal	-3,172
FY 1987 budget request	$ 3,595

Oil shale:

Goals/Objectives:

The goal of the Oil Shale R&D program is to provide a sound technologic basis for reduction of economic and environmental constraints to industrial development of the U.S. oil shale resources; and to increase the amount of resource that may be used economically.

Oil Shale represents a vast hydrocarbon resource in the U.S. that can be converted to a broad spectrum of products from raw kerogen (the heavy complex hydrocarbon contained in the mineral matrix) which can be combusted or used as a petrochemical feedstock, or converted to diesel and jet fuel. An estimated 1.8 trillion barrels of oil equivalent reside in place in the Green River Formation of Colorado, Utah and Wyoming; and an equal volume is believed to exist in the more far ranging (and less explored) Devonian and Mississippian oil shales of the east and midwest. The Western, Green River Formation deposits, are in fact marlstones formed from fresh water lakes. They have a high carbonate composition, and high hydrogen to carbon ratio in the organics creating chain structures called aliphatics. The Eastern, Devonian and Mississippian deposits are true marine shales. They have a high Illite content, and relatively low hydrogen to carbon ratio in the organics creating ring structures called aromatics. Alphatics are more easily converted to liquids with heat than are aromatics; therefore, eastern shales with the same organic content as a western shale will produce less liquid when subjected to a simple heating process. However, a drawback to retorting of Western shales is the carbonate which absorbs heat upon decomposition.

A suite of oil shale surface retort technologies exist today for processing high volumes of Western shale at what can best be described as marginal economics (45-55 $/BBL). In

situ retort technologies have been proven for certain site specific situations, e.g., the Geokinetics process where shallow lying thin deposits on the basin rims can be sufficiently fragmented to affect reasonable recovery. Modified in situ technology such as that proposed by Occidental poses economic questions and a high degree of risk because of the fairly extensive mining associated with it and an inability to predict, from one geologic setting to another, whether an explosive design will provide the necessary fracturing. Also, there are environmental questions associated with eventual abandonment. There is a need to explore more efficient, economic recovery systems and systems that can be applied effectively to a larger percentage of the resource. Excluding the Occidental Vertical Modified Insitu approach, the remainder of the approaches are at best marginally economic when applied to the easily accessed high grade zones representing only 5 to 10% of the total Western resources.

Aside from the conversion process, there are significant cost and environmental considerations relative to air, water and solid wastes generated from oil shale plants. As to the air emissions, best available control technology can be applied to meet standards for regulated pollutants for a single plant. But required environmental considerations would soon limit industry development due to total allowed emissions. Clean-up of process water and codisposal with spent oil shale pose significant potential impact to the regions hydrology and ecology. Evaporative emissions from the spent shale, spent shale pile structural and chemical stability, and transport of toxic substances to vegetation must be evaluated and mitigation methods developed before an oil shale industry will achieve environmental acceptability.

The Oil Shale Program was restructured in FY 1984. Evolving from that restructuring was a systems approach to develop essential process and environmental data for both Eastern and Western shales. Eastern and Western shales are to be selected on the basis of established criteria, subjected to an indepth characterization of organic and inorganic constituents. These reference shales are then to be processed in laboratory retorts under a prescribed set of conditions and the product and waste streams are to be characterized to determine the fate of the oil shale constituents as a function of process condition. Other aspects of the restructured program are to focus on environmental problems discussed above; and to explore promising new concepts for enhanced process economics, recovery efficiency, and reduced environmental impact.

As a result of new administration policy, the Oil Shale program will focus on the basic research using reference shales to systematically study the chemistry, kinetics, and emissions related to eastern and western oil shale processing. High capacity, continuous throughput solids recycle process conditions will be emphasized for the near term. Present contracts with industry to explore new concepts will be completed or terminated in FY 1986. In FY 1987, such oil shale projects could be eligible to compete for Fossil Energy joint venture pool funds.

FY 1986 Accomplishments:

FY 1986 accomplishments include:

- Completion of reports by Western Research Institute on incorporation of gas pressure drop, individual oil boiling fractions and liquid water behavior into the one-dimensional retorting model; on radiofrequency heating tests to measure oil yields at different heating rates; and on ambient emissions of spent shales.
- Completion of a final report on preliminary design of a 500 Tpd pilot plant utilizing a roller grate retort and Indiana shale.
- Completion by Los Alamos National Laboratory of reports on oil shale fragmentation tests conducted at the Anvil Points and Colony mines; and on a study to develop prioritized issues relative to commercial facility siting.
- Completion of report of phase I and II of a project to determine the feasibility of in situ retorting of Indiana oil shale.
- Completion of report by Lawrence Livermore National Laboratory of studies of reduction of NO_x emissions, and on operation of a solids recycle system with fluidized bed pyrolyzer and gravity flow mixer.

- Completion of a report by the University of Alabama Mineral Resources Institute on assessment of U.S. oil shales amenable to beneficiation followed by hydroretorting. Three of the most promising shales are to be selected for further testing.
- A report on the first year effort to expand the technology base for moving-bed hydroretorting of eastern shales including fines utilization is expected to be prepared by Hycrude, Inc.
- Initiate and complete studies to determine research needs and recommended tasks/activities for implementation of an oil shale extraction research program through the Idaho Operations Office.
- Initiate a cooperative agreement with the Western Research Institute (WRI).

Budget Request By Subactivity:	FY 1986 Approp.	FY 1987 Request	Net Change
Oil shale technology base	$ 8,447	$ 3,078	$ -5,369

The FY 1987 funding request for this subprogram is $3,078,000, a reduction of $5,369,000 from the FY 1986 funding level. This requires consolidation of the previous LLNL work on solids recycle chemistry and modeling into METC's research as subsequently described, and termination of all work at LLNL, SNL, and LANL.

The goal of the Oil Shale Technology Base program is to conduct basic research that provides a sound scientific basis for reduction of economic constraints to industrial development of the U.S. oil shale resources and to increase the amount of resource that may be used economically.

In FY 1986, efforts conducted at WRI emphasized basic research to improve understanding of the criteria for successful in situ processing of oil shale; detailed characterization studies of reference eastern and western shales; and basic research on new process concepts. Other WRI activities are described under Environmental Mitigation. Also in FY 1986, a contract study of a roller grate process concept applied to Indiana shale was completed, and a contract study of an in situ process concept applied to Indiana shale was continued and scheduled for completion in FY 1987. A university contract study of eastern shale beneficiation and hydrogen retorting was continued in FY 1986 and will be phased out in FY 1987 utilizing prior year funding. A contract study involving further applied research on eastern shale hydrogen retorting will be completed in FY 1987. Studies will be implemented and completed in FY 1986 to identify research needs in oil shale extraction and to propose a program for implementation through DOE's Idaho Operations Office as directed by the Congress.

In FY 1986, basic research was ongoing at Lawrence Livermore National Laboratory (LLNL) on solids recycle retorting and modeling; at Sandia National Laboratory (SNL) and Los Alamos National Laboratory (LANL) on in situ process and fragmentation modeling; and at Morgantown Energy Technology Center (METC) on process chemistry and kinetics, systems analysis, and development of computerized data bases.

In FY 1986, a contract awarded to Terra Tek, Inc., in FY 1985 to obtain reference shales and maintain a sample bank in support of the in house research program was continued, and will be continuing in FY 1987.

In FY 1987, the Morgantown Energy Technology Center will carry out an in-house program of research in the following areas:

- In depth characterization of oil shales to undergo process studies to provide a reference from which to interpret process mechanisms; and characterization of process products.
- Rapid pyrolysis studies on both eastern and western shales to define kinetics and mechanisms of oil shale decomposition phenomena and how process conditions affect product yield and quality.

- o Modeling of process phenomena to provide a framework to deal with process variables; to build an understanding of the interrelationship between process parameters; and to serve as a tool in designing experiments to fill data gaps.
- o Experimentation to address liquid-phase organic formation from organic vapors.
- o Quantification of the breakdown experienced by spent shale in solids recycle retort systems and the effect on heat transfer capability.
- o Development of a generic solids recycle process model incorporating retort and combustor phases.

	FY 1986 Approp.	FY 1987 Request	Net Change
Environmental mitigation	$ 3,689	$ 517	$ -3,172

The goal of the Oil Shale Environmental Mitigation program is to conduct basic research that provides a sound scientific basis for reduction of environmental constraints to industrial development of U.S. oil shale resources and to increase the amount of resource that may be used economically.

The FY 1987 funding request for this subprogram is $517,000, a decrease of $3,172,000. This reduction is a result of completing siting methodology studies as well as research on nitrogen emissions and the capture of sulfur by oil shale compounds under varying process conditions. The largest reduction however, is associated with efforts identifying and quantifying major and trace element emissions in gases, liquids and solids from reference shales.

In FY 1986, WRI completed basic research on solid waste and co-disposal and characterization of air and water emissions. Sulfur and nitrogen chemistry work that was being performed at Lawrence Livermore Laboratory during FY 1986 will be integrated with ongoing research at the Morgantown Energy Technology Center (METC). Los Alamos National Laboratory completed a study in FY 1986 of research needs pertinent to developing a methodology for analyzing impacts of oil shale facility siting. No further work in siting methodology will be conducted in FY 1987.

In FY 1987, METC will carry out an in-house program of research in the following areas:

- o Developing a fundamental understanding of the role of solids in solids recycle retorts in regard to removal of sulfur and nitrogen from vapor phase organic compounds during oil shale retorting.
- o Determining the extent of solids carryover into the product stream from solids recycle retorts and exploring mitigation strategies.
- o Modeling the sulfur and ammonia recovery process sections of a generic oil shale plant to aid in quantifying the impact of applying various retort process options.
- o Applying systems analysis methodologies to help define and prioritize research needs.

In FY 1987, under a annex to an umbrella agreement with Israel, research concerned with sulfur compound identification in oil shale waste streams is expected to continue as is health and safety related research support under an Interagency Agreement with the Bureau of Mines.

FTE Staffing Request

Direct FTE's are funded by this budget activity and include Federal personnel directly engaged in in-house research at the Energy Technology Centers. Although all indirect FTE's are funded in the Program Direction and Management Support budget activity, those who support the planning, management, and contract technical direction functions for this activity are included here in order to provide a clearer indication of the total Federal workforce supporting this activity.

DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
OIL SHALE
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Oil Shale Technology Base	Expanded eastern shale research in novel concepts and specific areas such as data base, utilization of fines, hydroretorting beneficiation, and studying retorting parameters and product characteristics. ($2,951)	Continued FY 1985 efforts on eastern shales. Includes eastern and western shale retorting parameters, and product characteristics related to beneficiation and hydroretorting. ($1,922)	Complete specific eastern shale research resulting from FY 1985 unsolicited proposals in the areas of hydroretorting and in situ processing. ($1,450)
	Developed a systems analyses capability to enable assessment from mining to spent shale disposal. ($748)	Continued developing a systems analyses capability to enable assessment from mining to spent shale disposal. ($399)	Continue developing a systems analysis capability to enable assessment from mining to spent shale disposal. ($277)
	Obtained reference eastern and western oil shales, began characterization studies of these shales, and initiated experiments with reference retort systems to provide data for modifying and developing chemical, physical, and economic models of generic, moving-bed processes. Supported novel concepts research on eastern and western shales. ($2,594)	Continued characterization studies of reference shales obtained in FY 1985. Continued experiments with reference retort systems to provide data for modifying and developing chemical, physical, and economic models of generic, moving-bed processes. ($2,192)	Continue experiments with reference shales in various generic solids recycle retort systems to provide data for modifying and developing chemical, physical, and economic models. Maintain reference shale bank activities including characterization and distribution of shales to program participants. ($1,201)
	Initiated development and maintenance of an oil shale data base. ($324)	Continued development and maintenance of an oil shale data base. ($144)	Continue development and maintenance of an oil shale data base. ($150)

OIL SHALE (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Oil Shale Technology Base (cont'd)	Continued experiments to evaluate, modify, and/or develop predictive models for oil shale fragmentation and in situ (low-void) retorting. ($2,111)	Completed experiments to evaluate, modify, and/or develop predictive models for oil shale fragmentation and in situ (low-void) retorting. ($2,834)	No activity. ($0)
	No activity. ($0)	Initiated and completed study of research needs/activities for establishing extraction research project through Idaho Operations Office. ($956)	No activity. ($0)
Environmental Mitigation	Initiated development of siting methodology. ($874)	Completed studies of siting methodology. ($376)	No activity. ($0)
	Initiated development of the environmental data base. ($246)	Continued development of the environmental data base. ($144)	Continue development of the environmental data base. ($50)
	Conducted research on nitrogen emissions and the capture of sulfur by oil shale compounds under varying process conditions. ($547)	Completed research on nitrogen emissions and the capture of sulfur by oil shale compounds under varying process conditions. ($192)	No activity. ($0)

OIL SHALE (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
	Identified and quantified major and trace element emissions in gases, liquids, and solids from reference retorts as a function of process parameters such as time, temperature, shale particle size and composition, and retort gas composition. Continued analytical methods development as necessary. Continued studies of critical questions associated with codisposal and spent shale pile stability. Supported novel concepts for environmental mitigation. ($4,233)	Identified and quantified major and trace element emissions in gases, liquids, and solids from reference retorts as a function of process parameters such as time, temperature, shale particle size and composition, and retort gas composition. Continued analytical methods development as necessary. Continued studies of critical questions associated with codisposal and spent shale pile stability. ($2,977)	Identify and quantify major and trace element emissions in gases, liquids and solids from reference shales as a function of process parameters such as time, temperature, shale particle size and composition, and retort gas composition. Continued analytical methods development as necessary. Support environmental research and health and safety research under international agreement with Israel and interagency agreement with Bureau of Mines. ($467)

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
LEAD TABLE
GAS
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(Tabular dollars in thousands. Narrative material in whole dollars.)

	FY 1985 Appropriation	FY 1986 1/ Appropriation	FY 1987 Base	FY 1987 Request	Request vs Base
Unconventional gas recovery (FE)					
Eastern gas shales:					
Operating expenses	$ 2,852	$ 938	$ 938	$ 355	$ -583
Subtotal	2,852	938	938	355	-583
Western tight gas sands:					
Operating expenses	5,028	5,393	5,393	3,582	-1,811
Subtotal	5,028	5,393	5,393	3,582	-1,811
Environmental and advanced research:					
Operating expenses	2,262	2,172	2,172	1,315	-857
Subtotal	2,262	2,172	2,172	1,315	-857
Total					
Operating expenses	10,142	8,503	8,503	5,252	-3,251
Unconventional gas recovery	$10,142	$ 8,503	$ 8,503	$ 5,252	$ -3,251
Staffing Total FTE's: Direct	10	11	11	10	-1
Indirect	12	11	11	10	-1

1/ Adjustments to the FY 1986 Appropriation are shown on the table on the following page.

Authorization: Section 4, P.L. 93-577
Section 301, P.L. 95-91

Department of Energy

FY 1987 Congressional Budget Request

Adjustments to FY 1986 Appropriations

	FY 1986 Conference	General Reduction	G-R-H Reduction	Total
Unconventional gas recovery (FE)				
Eastern gas shales:				
Operating expenses	$ 981	$- 5	$- 39	$ 938
Western tight gas sands:				
Operating expenses	5,642	29	-220	5,393
Environmental and advanced research				
Operating expenses	2,273	-12	- 89	2,172
Subtotal, Unconventional Gas Recovery (FE)	$8,896	$-46	$-347	$8,503
General Reduction:				
Operating Expenses	-46	46	-	-
Total, Unconventional Gas Recovery (FE)	$8,850	-	$-347	$8,503
Operating Expenses	8,850	-	-347	8,503

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Summary of Changes

FY 1986 Appropriation enacted	$ 8,503
Program increases and decreases:	
Eastern Gas Shales	
o Cancel scheduled stimulation of horizontal well drilled in FY 1986; also termination of planned stimulation model validation efforts	-583
Western Tight Gas Sands	
o Reduce level of effort in Multiwell Experiment and supporting research	-1,016
o Discontinue geologic/engineering studies of the Uinta and Greater Green River Basins	-253
o Discontinue supporting research for the Western Gas Sands program	-542
Subtotal	-1,811
Environmental and Advanced Research	
o Discontinue all university laboratory/field property determiniation efforts for gas hydrates and terminate all contract geologic characterization efforts	-612
o Discontinue detection/differentiation system development for deep source gas	-245
Subtotal	-857
FY 1987 budget request	$ 5,252

Unconventional gas recovery:

Goals/Objectives:

The unconventional gas resource in place is large, on the order of thousands of trillion cubic feet (TCF) and many times the size of our domestic reserves. The primary issue surrounding unconventional gas is not its size, but how much of the resource can be recovered. However, recovery of these resources represents a technological challenge. If successfully met, this additional gas combined with conventionally recovered gas would represent a secure domestic supply that could meet the nation's needs well into the next century both for existing markets and in an expanded market displacing imported oil.

The unconventional gas resources addressed under the UGR program are the tight lenticular sand formations of the west, fractured shales of the east, and the lesser known novel gas resources of gas hydrates and deep sources. Each of these resources is large, or estimated to be large, but is lacking a sufficient knowledge base to warrant significant industry investment. They are all geologically complex and require advances in extraction technology if substantial volumes are to become technically and economically producible.

The specific objectives of the Unconventional Gas Recovery program are to:

- o Reduce the uncertainty surrounding the potential magnitude of reserves of the unconventional gas resources and the conditions under which they will be produced.
- o Develop and improve extraction technologies to the point of technical readiness for private sector development.
- o Transfer all technical and economic data to industry.

FY 1986 Accomplishments:

Eastern Gas Shales
- o Completed installation of a directionally drilled horizontal well to test for increased gas recovery efficiency.
- o Established hydraulic fracturing design criteria for natural fractured reservoirs using physical-scaled models.
- o Completed testing and analyses from a second offset well test facility.

Western Tight Gas Sands
- o Completed geologic analyses and assessment for the Greater Green River Basin in Wyoming.
- o Continued efforts in validation of fracture conductivity models for proppant transport.
- o Completed tests of the high energy gas frac process through perforated casing.
- o Completed coastal sandstone interval stimulation at the multiwell experiment site.

Environmental and Advanced Research
- o Completed preliminary mapping of gas hydrate deposits on the Alaskan North Slope.
- o Continued site specific geologic evaluations of probable offshore hydrate deposits.
- o Established resource potential for deep source gas in target areas along the U.S. west coast.
- o Completed field examination of potential deep source gas occurrences at priority sites in western Washington.

Budget Request By Subactivity:	FY 1986 Approp.	FY 1987 Request	Net Change
Eastern gas shales	$ 938	$ 355	$ -583

The reduction in funding from FY 1986 to FY 1987 reflects the elimination of those research activities performed under industrial contracts. The projects supported in FY 1987 are focused on in-house research.

The fractured Devonian shale formations of the east and midwest represent an in-place resource in excess of 900 TCF. This information was developed in the early years of the programs, when research efforts were directed at determining the geologic character and magnitude of the shale gas resource Research efforts progressed to detailed reservoir analysis such as the Offset Well Test No. 1 (drilled in an area of established commercial gas production). The Offset Well Test involves the drilling of closely spaced wells to interrogate the reservoir under baseline conditions. From this work evolved a reservoir model quantifying the interrelationship of identified key reservoir parameters. To validate the reservoir model, a contract was awarded in FY 1984 to obtain additional defined information from selected areas (10 wells) and to establish a second Offset Well Test site in an area with no commercial production history but meeting certain geologic criteria determined by the reservoir model. Testing and evaluation at the second Offset Well site should be completed by early in FY 1987 with prior year funding.

Effective stimulation or the ability to predict that a stimulation technique will provide the needed performance remains as the key research need in the program. One concept, developed from recent reservoir studies, is that of a stimulated horizontal borehole. The same studies indicate that we can expect a multi-fold increase in gas recovery over conventionally stimulated vertical wells where typically only 10-25% of the gas in-place is recovered. The concept takes advantage of the natural fracture pattern by directionally drilling a horizontal wellbore perpendicular to the fracture planes, extending several hundreds of feet, and subsequently stimulating the reservoir at selected intervals. Drilling of the directional well will be completed during FY 1986. During drilling, core will be taken to obtain valuable data for reservoir and stimulation models. The state-of-the-technology for directionally drilling the desired

wellbores will be ascertained. Gas flow data from the directionally drilled well can be compared directly with that from adjacent, vertically drilled and completed wells. Stimulation of the well was scheduled to take place in FY 1987 under the technology base program. An attempt will be made in FY 1987 under the Cooperative R&D Venture Pool to solicit industry support in conducting the stimulation and analysis of this promising recovery concept. Planned field testing/evaluation of stimulation models which were to have been carried out in a variety of geologic settings at different fracture intensities will be cancelled.

DOE's in-house research efforts will continue in FY 1987 to focus on the development of predictive capability, i.e., stimulation and reservoir modeling, and on the integration of previously derived laboratory and field data to establish guidelines for industry on ways to optimize gas development/production from shale and associated reservoirs. The technical approach, which utilizes case history studies, will be applied systematically to previously ranked areas of shale production potential to investigate the following: the practical aspects of dual completion from shale and associated sandstone and coal reservoirs; and prospects for in-fill drilling in areas of different natural fracture intensity. Successful completion of these efforts should greatly enhance the economics of Devonian shale gas development. In addition, in-house efforts will continue in the gathering of available production data from shale wells. The data will be compiled and loaded onto a production data base system for subsequent use by modelers and industry.

In-house research activities for the Eastern Gas Shales subprogram are assigned to the Morgantown Energy Technology Center.

	FY 1986 Approp.	FY 1987 Request	Net Change
Western tight gas sands	$ 5,393	$ 3,582	$ -1,811

The reduction in funding from FY 1986 to FY 1987 reflects the elimination of those research activities performed under interagency agreements, national laboratories, and universities. The projects supported in FY 1987 are focused on in-house research and continuation of multiwell research activities.

Supporting research in the area of proppants and fluids for effective western gas sands stimulation and laboratory investigations into fracture propogation/communication across and between sand lenses will be terminated. Parallel efforts to provide the geologic backdrop to understand reservoir properties and response to stimuli, for the major basins will also be terminated.

The U.S. has a very large resource of gas held in low permeability sandstone formations. An NPC study estimated the in-place resource for these tight formations at 924 TCF. Of this resource, up to 300 TCF are contained in tight and mostly lenticular gas sands of the Rocky Mountain geologic basins. DOE's program focuses on these tight lenticular formations. Early in the subprogram history, a series of individual massive hydraulic fracturing (MHF) field experiments were performed. The results were very erratic and difficult if not impossible to explain. This led to the concept of the Multi-well Experiment (MWX) which consists of three closely spaced wells (125-150 ft apart) drilled to a depth of 7,500 feet and penetrating many lenticular sandstones. The experiment is designed to investigate the production characteristics of tight lenticular sandstones and to develop the strategies to effectively extract the resource, as well as to develop reservoir and stimulation diagnostics and predictive capability. The program strategy is to study and resolve technical problems at the MWX site, and then extrapolate these results across the Piceance Creek Basin and finally to the other two priority basins (Greater Green River and Uinta). Installation of the MWX facility was completed in FY 1983. A five-year experimental plan was developed to systematically obtain needed information. It is scheduled to end in FY 1988 with expiration of the current lease. During FY 1986, the last in a series of stimulations in the Coastal zone will be completed.

During FY 1987, field experiments will concentrate on the feasibility of stimulating and producing gas from remote sand lenses (not directly intersected by the wellbore). Stimulating and producing from remote sand lenses is the key to economic and efficient recovery of gas from tight lenticular gas sands.

In FY 1987, in-house research activities will continue. Emphasis will be on the analysis of reservoir, stimulation, and geologic data derived from the multiwell experiment. In-house geoscience studies will contribute knowledge to a better understanding of the various processes affecting gas recovery from lenticular sands. These efforts include log versus core studies (permeability), fluid/rock interactions during stimulation and lineament analysis. Together with selective data from industry test wells in other parts of the Piceance Basin, when available, researchers will attempt to extrapolate MWX results to other areas. Database activities will also continue with the gathering and loading of individual well production data as available from the Piceance and Greater Green River Basins.

In-house research activities for the Western Tight Gas subprogram are assigned to the Morgantown Energy Technology Center.

	FY 1986 Approp.	FY 1987 Request	Net Change
Environmental and advanced research	$ 2,172	$ 1,315	$ -857

The reduction in funding from FY 1986 to FY 1987 reflects the elimination of those research activities performed under industrial contracts, and universities. The projects supported in FY 1987 are focused on in-house research and geophysical/geochemical efforts under interagency agreements.

Workshops were held during FY 1982 for both gas hydrates and deep source gas. The primary purpose of these workshops was to thoroughly review past and ongoing research in these potential resource areas and to serve as a basis for formulating a program of research. From these workshops it became clear that little was known about either gas resource and that little research was being carried out in these areas. It was determined that a systematic and coordinated project was warranted to substantiate the presence, define the reservoir characteristics and develop recovery strategies for both the gas hydrates and deep source gas (specifically the deep source gas associated with subduction of organic materials at tectonic plate margins).

Under certain temperature and pressure regimes, gas in the presence of sufficient moisture will form gas hydrates - gas trapped in an ice crystal matrix (such structures are called clathrates). In addition, gas is also thought, in many situations, to be trapped beneath the main hydrate layer, forming a "free gas" zone. It is theorized that gas hydrates and associated free gas may represent a vast resource in excess of 2,500 TCF. However, little information exists to prove or disprove the theory.

In a coordinated effort with NSF, DOE, in FY 1983, began evaluating natural hydrate core taken during deep drilling operations off the coast of Guatemala. The laboratory program (aided eventually by the use of synthetic gas hydrates) set out to obtain basic chemical, physical, and thermodynamic properties and to evaluate diagnostic techniques that might be used to identify and quantify gas hydrates in situ. A parallel effort was undertaken to create a gas hydrate reservoir model, and using the model, to investigate recovery scenarios (both thermal and depressurization techniques are being examined). Both of these efforts will continue during FY 1987, utilizing in-house research teams. Other in-house activities during FY 1987 include laboratory optical tests, collection and analysis of seismic profiles, and methane displacement analysis. With the knowledge gained thus far from the laboratory work, the first field tests will be conducted in FY 1986 on the North Slope of Alaska to attempt to measure gas hydrates in place using geophysical techniques. The North Slope site was chosen because of the industry

drilling data that is available that can be integrated with and help validate the data obtained. A planned second year's effort on the North Slope of Alaska to obtain surface and subsurface geophysical and geochemical measurements of suspected hydrate deposits to further define hydrate target areas and understand hydrate reservoirs will be completed during FY 1987. The Canadian government is interested in gas hydrates both as a potential hazard relative to production operations and as a potential energy source, and a draft MOU has been prepared. Interest on the part of Canada, academia, and industry will be leveraged in an attempt to pursue planned work under cooperative R&D ventures following OMB guidelines.

The deep source gas project seeks to determine whether past subduction of the oceanic plate beneath the continental plate along the U.S. west coast carried sufficient organic material and created sufficient temperature and pressure to generate large volumes of natural gas. Such a determination would impact on where exploration for gas reservoirs would be undertaken. More specifically, the program seeks to establish the existence of natural gas arising from these deep source zones, establish migratory paths, determine the existence of potential gas reservoirs, define the limits of the target areas, and quantify the resource. Geological characterization tasks, initiated in FY 1984, were aimed at target definition to provide input towards resource potential and to aid in field verification of the subduction zone concept. Preliminary target areas have been identified (W. Calif., Oregon, W. Washington). These predominantly geophysical and geochemical studies utilizing in-house research teams will continue during FY 1987 to further define these target areas and thus help to determine their gas potential. During FY 1985 a new phase was initiated with the advent of experimental studies of deep gas composition, history of deep gases; and the development of a gas detection/differentiation system. Completion of these efforts will add to our knowledge of deep gas composition, identification of deep gases, and the potential for gas originating and being preserved along and adjacent to subduction zones.

An attempt will be made to solicit the cooperation, through the Cooperative R&D Venture Pool, of industry, universities, institutes and public laboratories in the pursuit of the fundamental research associated with developing a better understanding and therefore determining the development potential of the vast gas hydrate and deep source gas resources.

In-house research activities for gas hydrates and deep source gas are assigned to the Morgantown Energy Technology Center.

FTE Staffing Request

Direct FTE's are funded by this budget activity and include Federal personnel directly engaged in in-house research at the Energy Technology Centers. Although all indirect FTE's are funded in the Program Direction and Management Support budget activity, those who support the planning, management, and contract technical direction functions for this activity are included here in order to provide a clearer indication of the total Federal workforce supporting this activity.

DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
UNCONVENTIONAL GAS RECOVERY
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Eastern Gas Shales	Continued acquisition of shale reservoir property data (producing intervals, flow rates, etc.) in various locations within the Appalachian, Illinois and Michigan Basins. ($1,152)	Continued efforts with the acquisition of shale reservoir property data (producing intervals, flow rates, etc.) in various locations within the Appalachian, Illinois and Michigan Basins, utilizing prior year funding. ($0)	Complete testing, data analysis, and reports for reservoir property data utilizing prior year funding. ($0)
	Conducted research efforts in increasing longevity of oil production from Devonian shale reservoirs. ($400)	Completed research efforts in increasing longevity of oil production from Devonian shale reservoirs, utilizing prior year funding. ($0)	No activity. ($0)
	Continued integration of data in the shale data base as well as research in model development and rock mechanics. ($700)	Continued development of the Eastern Gas Shale production data base; also continued reservoir model refinement activity. ($303)	Continue development of the Eastern Gas Shale production technology base; also special geoscience investigations, system analyses, and technology transfer. ($355)
	Established cost-sharing, selected site, and completed design for a maximum recovery efficiency well in an area of established shale gas production. ($600)	Completed effort by drilling a directional borehole (maximum recovery efficiency well). Work was performed by BDM Corp. Total cost of project is estimated to be $1.2 M, and total project time is 1 1/2 years. ($635)	No activity. ($0)
Western Tight Gas Sands	Continued fracture stimulation research and testing at the multi-well facility located in Garfield County, Colorado. ($3,400)	Continued fracture stimulation research and production testing of lenticular tight gas sands. ($4,216)	Conduct fracture stimulation research and production testing of remote lense at MWX facility. ($3,200)

UNCONVENTIONAL GAS RECOVERY (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Western Tight Gas Sands (cont'd)	Continued geologic/engineering studies of Uinta and Greater Green River Basins. ($313)	Completed geologic/engineering studies of Uinta and Greater Green River Basins. Efforts will be conducted by USGS, in Colorado, and total project time is 7 years. ($253)	No activity. ($0)
	Continued generic supporting research which includes efforts in fracture mechanics and modeling, and diagnostics. ($1,315)	Continued supporting research activities in modeling, fracture diagnostics, geophysical instrumentation. METC will conduct the effort utilizing numerous contractors & universities. ($924)	Continue supporting research modeling, systems analysis, and data base development. ($382)
Environmental and Advanced Research	Continued resource identification and evaluation of gas hydrates and deep source gas. ($1,412)	Continued resource identification and evaluation of gas hydrates and deep source gas. METC and USGS, utilizing various contractors, will conduct this effort. ($885)	Continue resource identification and evaluation of gas hydrates and deep source gas. ($273)
	Continued development of a detection/differentiation system for deep source gas. ($150)	Completed deep source gas research on gas detection/differentiation system. Efforts will be conducted by Global Geochemistry Corp. of Menlo Park, Calif. ($245)	No activity. ($0)
	Continued lab analysis of hydrates core and modeling research. ($200)	Continued lab analysis of hydrate core and modeling research. ($192)	Continue lab analysis of hydrate core and modeling research. METC will conduct the ongoing effort. ($192)
	Completed modeling of coalbed reservoir performance from stimulated vertical wells. ($100)	No activity. ($0)	No activity. ($0)

UNCONVENTIONAL GAS RECOVERY (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Environmental and Advanced Research (cont'd)	No activity. ($0)	Conducted geochemical and geophysical diagnostic tests for gas hydrates on the North Slope of Alaska. ($586)	Conduct geochemcial and geophysical diagnostic tests for gas hydrates on the North Slope of Alaska. ($650)
	Continued evaluation and development of gas hydrate extraction/ production techniques and data analysis of environmental assessments. ($400)	Continued evaluation and development of gas hydrate extraction/ production techniques and data analysis of environmental assessments. ($264)	Continue evaluation and development of gas hydrate extraction/ production techniques and data analysis of environmental assessments. Efforts will be conducted by METC. ($200)

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
LEAD TABLE
PROGRAM DIRECTION AND MANAGEMENT SUPPORT
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(Tabular dollars in thousands. Narrative material in whole dollars.)

	FY 1985 Appropriation	FY 1986 1/ Appropriation	FY 1987 Base	FY 1987 Request	Request vs Base
Program direction and management support (FE)					
Management support:					
Headquarters program direction					
Operating expenses	$ 8,273	$13,380	$13,380	$11,260	$ -2,120
ETC program direction					
Operating expenses	37,907	39,265	39,265	28,740	-10,525
Subtotal	46,180	52,645	52,645	40,000	-12,645
The Federal Inspector for the Alaska Natural Gas Transportation System:					
Operating expenses	...	511 2/	511	221	-290
Subtotal	...	511	511	221	-290
Total					
Operating expenses	46,180	53,156	53,156	40,221	-12,935
Program direction and management support	$46,180	$53,156	$53,156	$40,221	$-12,935
Staffing Total FTE's: Direct	0	0	0	0	0
Indirect	223	249	249	191	-58

1/ Adjustments to the FY 1986 Appropriation are shown on the table on the following page.

2/ This amount represents funding for the Office of the Federal Inspector funds appropriated under the Fossil Energy R&D account in the Department of Energy in FY 1986.

Authorization: Section 4, P.L. 93-577
Section 301, P.L. 95-91

Department of Energy

FY 1987 Congressional Budget Request

Adjustments to FY 1986 Appropriations

	FY 1986 Approp.	General Reduction	Gramm-Rudman Hollings	Total
Program direction and management support (FE)				
Management support:				
Headquarters program direction				
Operating expenses	$14,003	$ -76	$ -547	$13,380
ETC program direction				
Operating expenses	41,086	-216	1,605	39,265
Subtotal	55,089	-292	-2,152	52,645
Institutional investment:				
Capital equipment	3,000	-18	-117	2,865
Alaska Pipeline Inspector	535	- 3	- 21	511
Construction	3,485	-16	-137	3,332
Subtotal, Program Direction and Management Support	$62,109	$-329	$ 2,427	$59,353
General Reduction:				
Operating Expenses	-295	-295	-	-
Capital Equipment	- 18	18	-	-
Construction	- 16	16	-	-
Total, General Reduction	-329	329	-	-
Total Program Direction and Management Support	$61,780	-	$-2,427	$59,353
Operating	55,329	-	-2,193	53,156
Capital Equipment	2,982	-	- 117	2,865
Construction	3,469	-	- 137	3,332

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Summary of Changes

FY 1986 Appropriation enacted	$53,156
Program increases and decreases:	
Management Support	
o Headquarters program direction - decrease in funding for salaries and related expenses including SBIR assessment	-2,120
o ETC program direction - decrease in funding for site support and other overhead items	-10,525
Subtotal	-12,645
The Federal Inspector for the Alaska Natural Gas Transportation System	
o Reduce activity of the project sponsors and liaison with other project participants	-290
FY 1987 budget request	$40,221

Budget Request By Subactivity:	FY 1986 Approp.	FY 1987 Request	Net Change
Management support	$52,645	$40,000	$-12,645
Headquarters program direction	$13,380	$11,260	$ -2,120

The FY 1987 funding of $11,260,000 for Headquarters program direction includes $7,178,000 for salaries, benefits and travel for 109 FTE's at Headquarters including 35 FTE's associated with general management and program support and 74 FTE's for technical program direction. The FY 1987 employment estimates assume enactment of legislation to reduce or repeal legislative employment requirements. Until the requirements are changed, the Department plans to comply with the legislative requirements regarding personnel levels.

The Headquarters staff is responsible for overall program direction. In carrying out this responsibility, the Headquarters staff: implements DOE policy and communicates that policy to the Energy Technology Centers; sets program objectives; develops program plans and evaluates alternative program strategies; develops and defends budget requests to the Office of Management and Budget and to the Congress; approves procurement plans; and monitors work progress, evaluates projects, and approves revisions in work plans as required to attain program goals.

The proper coordination and direction of the Fossil Energy program requires close and active participation by Federal personnel in contract selection and administration and requires frequent reviews by Headquarters staff with program responsibility. The complexity of the program, the geographic distribution of the research efforts throughout the U.S., and the intensive and frequent reviews necessary to manage these efforts requires constant coordination with performing organizations.

In addition, the FY 1987 request includes $4,082,000 for overhead expenses generic to the entire FE program which were financed in previous years (FY 1985 and prior) by program assessments, including $100,000 for quality assurance activities. These expenses also include printing; historically black colleges; small business innovative research program; and general management support including computer services, technical support services, conferences, etc.

ETC program direction	$39,265	$28,740	$-10,525

The FY 1987 funding of $28,740,000 provides for indirect costs at the Energy Technology Centers (ETC's) in support of day-to-day project management functions for assigned

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programmatic areas. Indirect costs provide for facility operations, maintenance, finance and administrative support, and other costs not appropriately chargeable to R&D projects. In addition, ETC program direction funds provide for salaries, benefits, and travel for 250 personnel who perform indirect activities that support all Fossil Energy R&D programs. It should, also, be noted that there are 180 direct funded FTE's performing R&D work. Typical work activities performed include contract and National Laboratory monitoring; development and maintenance of project, budget, and procurement plans, and other activities related to program and site support. Funding for the direct costs (personnel and materials) of R&D work performed on-site at the ETC's is included in the various R&D program budget requests. It should be noted that in light of a restructured and reduced Federal research program carried out through the cooperative agreement with NIPER, a Bartlesville Project Office is no longer required. It is anticipated that proposed legislation will be submitted for consideration to authorize the "privitization" of the federally-owned research center located at Bartlesville.

	FY 1986 Approp.	FY 1987 Request	Net Change
The Federal Inspector for the Alaska Natural Gas Transportation System	$ 511	$ 221	$ -290

The Office of the Federal Inspector for the Alaska Natural Gas Transportation System (OFI), authorized by the Alaska Natural Gas Transportation Act of 1976, began operation in July 1979 pursuant to Executive Order No. 12142. The Federal Inspector is responsible for coordinating all Federal activities pertaining to the pipeline in order to assure timely, efficient, safe, and environmentally sound construction.

The current workload of the Federal Inspector requires a small staff (3) and consists of following the reduced activity of the project sponsors and liaison with other project participants. All field activities have been completed and field offices are being deactivated. Beginning in FY 1986, funds for the OFI were appropriated under the Fossil Energy Research and Development account in the Department of Energy for administrative support purposes.

All essential technical work will have been completed by the fall of 1985. The need for technical assistance will be minimal and on a case-by-case basis as environmental/ technical issues surface. All field offices will be closed and arrangements maintained to contract for any necessary technical services that might arise.

The primary activities of the OFI will include:

- liaison with the sponsors, producers, other Federal agencies, the State of Alaska, and the Canadian Government;
- the assessment of developments in the world energy market, specifically the U.S. and Canadian oil and gas situation as they affect the Alaska Natural Gas Transportation System (ANGTS). Participation in studies and other activities performed by DOE staff, other Federal agencies, the State of Alaska, or the Canadian government as they pertain to related energy transportation systems;
- participation in Canadian and U.S. regulatory activities that could impact the remobilization of ANGTS;
- participation in additional advance planning for Phase II; and
- performing the routine administrative and management functions of the OFI.

As some of the these functions overlap existing DOE responsibility, the attachment of the OFI to DOE for administrative purposes will benefit both organizations by allowing closer coordination and eliminating duplication of efforts.

The FY 1987 budget request and outyear estimates reflect costs for rent, communications, and related "overhead" costs to be provided by DOE through a Memorandum of Understanding. All other object class estimates flow directly from the total number of workyears projected (3), and are based on average historical costs per workyear.

Construction of the gas pipeline itself is divided into two stages. The first stage, which was completed in the fall of 1982, involved construction of portions of the Eastern and Western Legs (referred to as "prebuild" or "Phase I" construction) to transport natural gas from Alberta, Canada. Phase I required construction of 529 miles of the system in Canada south of James River Station, 823 miles of the Eastern Leg from the U.S.-Canadian border to Ventura, Iowa, and 160 miles of the Pacific Gas Transmission System from Idaho to Stanfield, Oregon. The total 1,512 miles completed to date represents 32 percent of the entire ANGTS system.

The second phase of the projects is the completion of the Alaskan and northern Canadian portions, the Alaska Gas Conditioning Facility (AGCF), and lower 48 segments necessary to deliver the Alaskan natural gas to the continential U.S. As of April 1982, construction of this portion of the system was scheduled to be completed during the winter of 1989-90. While the Northwest Alaskan Pipeline Company (NWA) has not officially announced a new system completion date, the OFI is assuming that the pipeline will be completed sometime in the mid 1990's. The general opinion of the ANGTS participants, gas industry analysts and government regulators is that, within a few years, the gas markets will have stabilized and the financing prospects improved enough to permit the second phase of ANGTS construction to proceed.

Although the OFI foresees some additional delays in the startup of Phase II, the ANGTS project has been brought to a relatively advanced stage of planning, such that it could move forward fairly quickly when market conditions are more appropriate. All major regulatory work has been completed, except for the final FERC certificate and the State of Alaska's Right-of-Way Grant. The basic engineering is nearly to the point of final design, with the solution of the frost heave problem and approval of the Design Criteria Manuals. Given these few additional requirements, the OFI believes that pipeline construction in Alaska could begin about two years after a remobilization takes place.

FTE Staffing Request

Fossil Energy is requesting a total of 542 FTE's. Of this amount, 180 FTE's are directly funded personnel performing hands-on research and are budgeted for in each of the separate activity lead tables and are identified as "direct FTE's". The remaining 362 FTE's are financed in the Program Direction and Management Support activity in FY 1987. Of this amount, 171 FTE's are closely associated with separate program activities and can be identified as indirect FTE's within the individual programs in each separate activity lead table. Of the remaining 191 FTE's, there are 35 FTE's at Headquarters which include the immediate Office of the Assistant Secretary for Fossil Energy and his supporting budget and administrative staff; 153 FTE's support the ETC's policy and management functions and 3 FTE's support the Office of the Federal Inspector for the Alaska Natural Gas Transportation System.

The FTE request described above is summarized as follows:

	Program Direction	Direct	Total
Direct			
METC	0	73	73
PETC	0	107	107
Subtotal	0	180	180
Policy and Management			
HQ	35	0	35
METC	65	0	65
PETC	88	0	88
Alaska Natural Gas Transportation System	3	0	3
Subtotal	191	0	191
Technical Program Direction			
METC	72	0	72
PETC	25	0	25
Headquarters R&D	74	0	74
Subtotal	171	0	171
TOTAL	362	180	542

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
PROGRAM DIRECTION AND MANAGEMENT SUPPORT
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Headquarters Program Direction	Provided funds for salaries, benefits, and travel for Headquarters staff. ($8,273)	Provided funds for salaries, benefits, and travel for Headquarters staff and overhead expenses generic to the entire FE program. ($13,380)	Provide funds for salaries, benefits, and travel for Headquarters staff and overhead expenses generic to the entire FE program, including SBIR assessments. ($11,260)
ETC Program Direction	Provided funds for ETC indirect costs. ($37,907)	Provided funds for ETC indirect costs. ($39,265)	Provide funds for ETC indirect costs and for site support. ($28,740)
Office of the Federal Inspector for the Alaska Natural Gas Transportation System	Completed review approval of Pipeline Design Criteria Manual, pre-mobilization environmental plan package; continued other technical reviews. ($460)	Continued technical reviews of ANGTS design and/or remobilization packages. ($38)	Continue technical reviews of ANGTS design and/or remobilization packages. ($36)
	Initiated review of Frost Heave Program documents and activities, and long-term Frost Heave research. ($125)	Completed review of Frost Heave Program documents and activities; continued long-term Frost Heave research using prior year funding. ($57)	Complete long-term Frost Heave research using prior year funding. ($11)
	Initiated development of OFI Remobilization Encyclopedia (completed first draft). ($150)	Continued development and refinement of Remobilization Encyclopedia. ($10)	Continue development and refinement of Remobilization Encyclopedia. ($10)
	Continued to assess developments in U.S. and Canadian energy markets, and gas exploration and transportation projects in reference to ANGTS. ($110)	Continued to assess developments in U.S. and Canadian energy markets, and gas exploration and transportation projects in reference to ANGTS. ($72)	Continue to assess developments in U.S. and Canadian energy markets, and gas exploration and transportation projects in reference to ANGTS. ($33)

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PROGRAM DIRECTION AND MANAGEMENT SUPPORT (cont'd)
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Office of the Federal Inspector for the Alaska Natural Gas Transportation System (cont'd)	Continued to maintain liaison with project sponsors, producers, other Govt. agencies, State of Alaska and Canadian Govt. ($100)	Continued to maintain liaison with project sponsors, producers, other Govt. agencies, State of Alaska and Canadian Govt. ($58)	Continue to maintain liaison with project sponsors, producers, other Govt. agencies, State of Alaska and Canadian Govt. ($26)
	Developed and implemented plans for administrative support. ($75)	No activity. ($0)	No activity. ($0)
	Performed routine administrative and support functions. ($316)	Continued to perform routine administrative and support functions. ($276)	Salaries and related expenses for administrative and support functions. ($105)

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
LEAD TABLE
PLANT AND CAPITAL EQUIPMENT
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(Tabular dollars in thousands. Narrative material in whole dollars.)

	FY 1985 Appropriation	FY 1986 1/ Appropriation	FY 1987 Base	FY 1987 Request	Request vs Base
Plant and capital equipment (FE)					
Capital equipment:					
Capital equipment	$ 4,425	$ 2,865	$ 2,865	$ ...	$ -2,865
Subtotal	4,425	2,865	2,865	...	-2,865
Construction:					
GPP at ETC's	2,458	2,855	2,855	...	-2,855
METC waste water treatment fac.	2,458	...	...	...	0
METC administration wing	...	477	477	...	-477
Subtotal	4,916	3,332	3,332	...	-3,332
Total					
Capital equipment	4,425	2,865	2,865	...	-2,865
Construction	4,916	3,332	3,332	...	-3,332
Plant and capital equipment	$ 9,341	$ 6,197	$ 6,197	$ ... 2/	$ -6,197
Staffing Total FTE's: Direct	0	0	0	0	0
Indirect	0	0	0	0	0

1/ Adjustments to the FY 1986 Appropriation are shown on the table on the following page.
2/ Plant and Capital Equipment transferred from the Program Direction and Management Support activity.

Authorization: Section 4, P.L. 93-577
Section 301, P.L. 95-91

Summary of Changes

FY 1986 Appropriation enacted	$ 6,197
Program increases and decreases:	
Capital Equipment	
o No funds have been requested for capital equipment	-2,865
Construction	
o No funds have been requested for construction	-3,332
FY 1987 budget request	$ ...

Budget Request By Subactivity:	FY 1986 Approp.	FY 1987 Request	Net Change
Capital equipment	$ 2,865	$ ...	$ -2,865

Capital equipment is purchased as needed to replace obsolete equipment so that the Energy Technology Centers (ETC's) and National Laboratories analytical capabilities are constantly being upgraded. New state-of-the-art diagnostic instrumentation improves in-house capabilities. Examples of such equipment are as follows: low energy electron defractor, high pressure calorimeter, calibrated blackbody radiation source, molten caustic reactor, Argon ion laser, and various types of oscilloscopes. No funds have been requested for capital equipment in FY 1987.

Construction	$ 3,332	$ ...	$ -3,332

Construction funds provide for general plant projects (GPP) at the Energy Technology Centers when needed, and are dedicated to a number of improvements, alterations and additions at each of the Energy Technology Centers. No funds have been requested for construction in FY 1987.

DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
PLANTS AND CAPITAL EQUIPMENT
KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Capital Equipment	Provided necessary capital equipment for ETC's and National Laboratories. ($1,925)	Provided for centralized funding for capital equipment needs in all FE R&D activities conducted at the ETC's, National Laboratories, and BPO. ($2,865)	No activity. ($0)
	Acquired mainframe computer at METC. ($2,500)	Acquired mainframe computer at METC. ($2,500 of FY 1985 funds)	No activity. ($0)
Construction	Provided for general plant projects at ETC's. ($2,458)	Provided for general plant projects at ETC's. ($2,855)	No activity. ($0)
	Completed the waste water treatment facility at METC. ($2,458)	No activity. ($0)	No activity. ($0)
	No activity. ($0)	Provided funding for planning and design of METC administration wing. ($477)	No activity. ($0)

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
LEAD TABLE
COAL

FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(Tabular dollars in thousands. Narrative material in whole dollars.)

	FY 1985 Appropriation	FY 1986 Appropriation	FY 1987 Base	FY 1987 Request	Request vs Base
Cooperative R&D ventures pool (FE)					
Operating expenses	$ ...	$ ...	$ ...	$12,500	$+12,500
Subtotal	...	...	...	12,500	+12,500
Total					
Operating expenses	...	...	...	12,500	+12,500
Cooperative R&D pool	$ ...	$ ...	$ ...	$12,500	$+12,500
Staffing Total FTE's: Direct ...					
Indirect .					

Authorization: Section 4, P.L. 93-577
Section 301, P.L. 95-91

Summary of Changes

FY 1986 Appropriation enacted	$ ...
Program increases and decreases:	
Cooperative R&D Ventures Pool	
o Initiation of cooperative R&D ventures	+12,500
FY 1987 budget request	$12,500

Cooperative R&D ventures pool:

Goals/Objectives:

Applied research and technology development efforts in Fossil Energy should strengthen U.S. technological competitiveness in the world market and achieve advancements in capability to produce energy from domestic resources, when needed, at reasonable costs with acceptable environmental and health and safety consequences.

One of the primary goals of all the applied research areas in FE is to effectively transfer technology from Federal and university laboratories to private industry. The earlier industry is involved, and the more directly that the research agenda is guided by the companies' own economic self-interest, the more effective the transfer is likely to be. A new program will be initiated in 1987, which will be in a sense a "pilot" of a transformation of much of FE's industry-performed research. This funding pool will be used to participate in industry-formed cooperative R&D ventures, as an incentive for companies to take advantage of the Cooperative R&D Act of 1984. Objectives of this new approach will be:

- o Implementation of a process by which industry will join with Government in applied research and development activities that will result in products, processes, and technology that will contribute to achieving the energy and technology goals of the United States.
- o Reduction and/or elimination of those traditional barriers that limit the financial and technical cooperation between the private and public sectors (e.g., patent positions, proprietary rights, anti-trust concerns, etc.).

Intra-industry cooperative ventures are ideally suited to this technology-transfer/proof-of-concept stage of activity. By law, and because of the competitive interests of the companies involved, their activity is restricted to pre-competitive (i.e., not product-specific) research and development. This matches Administration policy of supporting longer-term generic research that benefits the public, but not using tax dollars to subsidize a particular company's development of proprietary products. Support of industry-cooperative R&D allows limited Federal funds to strengthen a whole industry and not just one or a few selected players. This can clearly benefit emerging industries as well as more mature ones.

A cooperative venture's research agenda will be initially set by the industrial partners that form it: when DOE chooses to participate in a given venture, the companies will know that through their own willingness to invest they are having greater influence on the direction of Federal funding spending than they do in contract research. The pooled funding will also provide a greater degree of private cost-sharing for applied R&D, allowing Federal dollars to go further.

This pooling also serves as a risk sharing mechanism and Federal funding contributes to that by being more risk neutral than most private funding sources. If the cooperative venture is defined broadly, with a substantial membership base and level of funding, it can perform or sponsor technology development projects in a number of related areas. This serves to further reduce the risk to the participants, assuring better changes for shared successes that will repay each party's investment.

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As a partner in such ventures, DOE will share in both decision-making and (where they exist) royalty profits from patents granted to the cooperative ventures.

The Department will not place tight constraints on the types of cooperative opportunities to be considered, but some characteristics will be considered for all proposals:

- the factor by which Federal funding is being leveraged (in all cases, DOE should be a minority partner -- i.e., Federal funds should comprise less than half of the total funding for the venture);
- the Department's certainty that the support they provide will not be displacing support that would otherwise come from the private sector;
- the degree to which DOE shares in royalties or other profits from the venture, proportionate to its contribution to the venture;
- each partnership must contain at least two companies from the same industry (to ensure that their interest will be in pre-competitive R&D); and
- preference should be given to cooperative ventures formed by companies that have previously proven themselves successful in obtaining and managing co-funding from private sources.

DOE will aggressively seek to identify areas of cooperation by providing the forum for effective industry/industry and industry/government interfacing and through contacts with individual companies to serve as a catalyst/broker in the formulation of joint venture proposals. Incentives, aside from monetary contributions, that might be considered by the DOE as a minority partner include:

- The use of expensive, unique government-owned facilities in addition to monitoring and technology transfer support;
- Interfacing/assisting through U.S. Dept. of Commerce on licenses, and patent rights;
- Serving as a vehicle/entree for tying into research being conducted in other countries; and
- Interfacing/assisting through U.S. Dept. of Justice and U.S. Dept. of Commerce as well as public forums to avoid concerns/issues concerning any appearance of anti-trust activities.

The mechanism for the selection of ventures in which to participate will combine two key elements: (1) nomination of projects by the majority industry partners within the broad areas of research sponsored by the Department in the FE program, but especially in the area of oil, gas, or shale resources and underground coal gasification by any applicable technical route, and (2) comparison, evaluation and selection of the most effective projects using criteria consistent with the objectives of the cooperative project pool (e.g., leverage of Federal funds; creation of new and innovative activities; fostering further opportunities for continued advancement; appropriate and sound business terms for all partners; strengthening of U.S. technological competitiveness; strength and quality of venture organization and goals; and significant opportunities for ultimate return of the taxpayer investment through royalty and other forms of future profit sharing).

It is important that incentives be considered and enhanced over the range of potential projects which might be attractive to potential partners, including industrial concerns, industry associations, government or government/industry combinations in friendly nations that share a need for substitute fuels. Two major program activities anticipated to support these objectives (all of which relate essentially to making the cooperative R&D pool mechanism work as well as possible to create valuable joint venture activities) are (1) discovery and building of the consensus opportunities essential to useful joint ventures, and (2) solicitation, analysis, evaluation and other functions needed to make productive joint ventures occur.

Cooperative ventures undertaken will assure tie-in to any downstream profits resulting from application of developed technology porportionate to the DOE share in the venture.

Budget Request By Subactivity:	FY 1986 Approp.	FY 1987 Request	Net Change
Cooperative R&D ventures pool	$ ...	$12,500	$+12,500

The research and development efforts embodied in this request include recovery of gas from unconventional resources (e.g., eastern gas shales, western gas sands, gas hydrates, Arctic sources, deep sources and coalbed methane); application of advanced concepts to the removal of light oil, heavy oil and tar sands from reservoirs where present methods are uneconomical and/or ineffective; recovery of oil and energy from the Western Tertiary and Eastern Devonian and Mississippian oil shale deposits; recovery of gas from underground coal gasification; and other research and development concerning U.S. deposits of oil, gas and shale brought forth to DOE for consideration under cooperative venture arrangements ultimately to make greater use of these resources.

In FY 1986 and prior years, the Office of Fossil Energy has effectively increased the knowledge base on oil, gas, and shale technologies available to industry by supporting both technology base research and development in these areas and applied research and development which had the purpose of encouraging both evolutionary and innovative process related technology enhancements. Within the structure of this FY 1987 budget, the technology base work planned is outlined on the basis of technology areas and individual program elements. The purpose of this section of the FY 1987 budget is to describe the activity planned to make available Federal support for cooperative R&D with non-Federal entities across the whole field of oil, gas, shale, and underground coal gasification which may appeal sufficiently to private sector organizations to achieve joint venture arrangements in which the Federal Government can constructively participate as a minority partner.

The spectrum of applied research and technology development efforts anticipated in these technology and resource areas range from laboratory/bench scale activities through efforts such as field tests--precursors to actual commercial deployment and cash flow. The scale at which the research is to be conducted is anticipated to be a function of how strong an established technology base exists in the area of interest, but it must be limited to pre-competitive steps of maturity. For example, many of the unconventional gas resources of interest have not been defined well enough to develop recovery strategies with confidence. In these instances, industry and other parties could form a cooperative venture with DOE as a minor partner to develop sufficient data requisit to the next step, i.e., design and test of promising recovery concepts. A joint venture under these circumstances might entail a phased approach with an up front formulation phase and a subsequent concept analysis phase. At the other end of the spectrum, broad based industry support may be generated for pursuit of a fundamental concept for conversion of oil shale based on a strong technology base providing sufficient evidence of significantly improved economics and efficiency to warrant correlated technology development and process testing. Similarly, in the area of underground coal gasification, it is expected that the primary interest expressed will be in modest-scale pre-commercial field tests of the most promising concepts to produce the data necessary to allow the subsequent design and construction of commercial plants for the production of competitively priced medium Btu gas to be used as a chemical feedstock for conversion to any of a suite of product options. Additional interests may be expressed in the use of the technology to address otherwise unattractive coals not currently being produced because of their depth, ash content, thickness, or high sulfur content. Finally, much interest has been expressed by other countries (e.g., Brazil, Spain, and Australia) in the utilization of the UCG technology to satisfy their domestic energy needs. This interest is expected to continue and become more intense in the future. Opportunities may also exist for cooperative ventures among equipment manufacturers in other areas of coal utilization.

Wide opportunity for participation in a cooperative venture will be encouraged by working closely with industry and publically sponsored research organizations such as GRI and non-profit research institutions such as NIPER that already serve as government/industry interfaces. However, the major venture participants will ultimately decide on participants and their roles and the ventures pursued for proposal to DOE for minor limited partnership. Membership criteria or limitations will, of course, also be subject to the guidance set forth in the Cooperative R&D Act of 1984 and subsequent legal interpretations.

Further leveraging of our cooperative agreements with Venezuela, Canada, Brazil, and Mexico will be considered. Common interest in the development of recovery technologies could result in foreign countries becoming significant contributing partners up front and establishment of foreign markets for U.S. technology downstream.

The illustrative examples discussed above reflect the Department's current best estimate of areas where the private sector is most likely to express interest in joint ventures with DOE. However, it is DOE's intent to impose minimal constraints on potential proposals and to select on the basis of technical and financial merit among all proposals regardless of the specific technical area proposed for further R&D.

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DEPARTMENT OF ENERGY

Proposed Appropriation Language

Naval Petroleum and Oil Shale Reserves

For necessary expenses in carrying out naval petroleum and oil shale reserves activities, including the purchase of not to exceed [3] 1 passenger motor [vehicles] vehicle, for replacement only, [$13,,668,000] $127,108,000, to remain available until expended: Provided, That section 160 of the Energy Policy and Conservation Act (Public Law 94-163, as amended) is amended (1) by striking out subsection (d); (2) by striking the phrase "subsections (c) and (d)" in each place where it occurs in subsection (e) and inserting in lieu thereof "subsection (c)", and (3) by redesignating subsection (e) as subsection (d), (Public Law 94-163, as amended). (Department of Interior and Related Agencies Appropriations Act, 1986, as included in Public Law 99-190.)

DEPARTMENT OF ENERGY

FISCAL YEAR 1987 CONGRESSIONAL BUDGET REQUEST

SUMMARY OF ESTIMATES BY APPROPRIATION BY MAJOR ACTIVITY

NAVAL PETROLEUM AND OIL SHALE RESERVE

(Budget Authority in Thousands of Dollars)

	FY 1985 Actual	FY 1986 Estimate	FY 1987 Request
Naval Petroleum and Oil Shale Reserve	$ 195,924	$ 168,850	$ 163,569
Use of Prior Year Balances	-39,000	-155,848	-36,461
Savings From FY 84 Initiatives	-50	---	---
Total, Naval Petroleum and Oil Shale Reserve	$ 156,874	$ 13,002	$ 127,108
Revenues	$-846,038	$-831,152	$-1,011,809

DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
PROGRAM OVERVIEW

Naval Petroleum and Oil Shale Reserves

The Naval Petroleum and Oil Shale Reserves consist of three petroleum and three oil shale reserves established in a series of Executive Orders between 1912 and 1924 to provide an emergency source of liquid fuels for the armed forces. Subsequently, the Congress endorsed the establishment of the Reserves and provided authority for their operation through a series of laws now codified in Title 10, United States Code, Chapter 641.

Pursuant to the Naval Petroleum Production Act of 1976, the three petroleum reserves are being produced at their maximum efficient rates, and presently, the produced petroleum is sold either competitively in the open market or to the Department of Defense (DOD). Such production is authorized through April 5, 1988.

Since 1976, Congress and three successive Administrations have pursued a policy requiring that oil, natural gas and other hydrocarbons at the NPR's be produced and sold; that the proceeds from the sale be used to reduce the Federal budget deficit; and that the nation's emergency petroleum needs be assured by building up the Strategic Petroleum Reserve (SPR). The SPR today contains 499 million barrels of oil. As Congress foresaw in 1976, a superior source of oil for emergencies has been created. SPR can pump oil at 3 million barrels per day -- 30 times faster than the NPR's. Legislation was enacted in 1984 to simplify the Department of Defense petroleum procurement, one of the original motivating factors behind the establishment of NPR, and in addition, the overall energy situation has significantly improved.

The Administration is now proposing that the next logical step be taken with respect to the NPR's. Legislation will be submitted at a later date which will propose that Federal ownership interests in the NPR's 1 and 3 be offered for sale outright, under a competitive situation, to the highest bidder. This policy is to designed to assure that the fields are produced as efficiently as possible and also assure that the government receives maximum value from the fields. The purchaser would be subject to Windfall Profits Tax as well as corporate income tax requirements. The Administration looks forward to discussing this proposal in detail with members of Congress and staffs.

The rest of this document describes the program needs, assuming that the NPR's are operated through the end of the fiscal year. This request totals $163,569,000, offset by $36,461,000 of prior year balances carried forward, for a net appropriation request of $127,108,000. Any unused appropriated funds remaining after the sale would be proposed for recission.

The primary development programs at both Reserves have been completed. This has resulted in a shift of programmatic emphasis to operation and maintenance activities as opposed to large development programs. This accounts for relatively level drilling and facility programs. At such time as the application of enhanced oil recovery techniques is proven to be technically and economically viable, large development funding may again be requested.

Initial development drilling has essentially been completed at NPR-1 and 3 in known hydrocarbon bearing formations. A major infill drilling program is proposed for the eastern flank of the Shannon reservior at NPR-3 where

it has been determined that EOR techniques are not feasible. The major drilling program emphasis is directed at maintaining maximum efficient production of the reserviors. No major facilities projects are planned at either NPR-1 or NPR-3 in FY 1987. This budget provides final funding for the protection against Naval Oil Shale Reserves No. 3 (NOSR - 3) gas migration to private lands.

The Government's share of crude oil produced from the Reserves, which is estimated to be 104,000 barrels of oil per day (BOPD) in FY 1986 and 91,000 BOPD in FY 1987, is sold on the open market to the highest competitive bidders and to the DOD under a petroleum transfer agreement. The bulk of natural gas produced at the Petroleum Reserves is reinjected into the oil-bearing formations to maintain reservior pressures and production. The surplus gas, about 160 million cubic feet per day (MMCF/D)in FY 1986 and 150 MMCF/D in FY 1987, and the 620,000 gallons per day (G/D) of liquid products in FY 1986 and 525,000 G/D in FY 1987 obtained from processing the natural gas, are presently sold through competitive sales to the highest qualified bidders. Revenues from all sales in FY 1985 were about $1.3 billion, including Windfall Profits Tax receipts.

NPR-1, Elk Hills, located near Bakersfield, California, is currently operated under a unitization agreement (Unit Plan Contract) between the Government and Standard Oil Company of California (Chevron U.S.A. Inc.). Under this agreement, the Government establishes the rate of production but all exploration, prospecting, development and producing operations on the Reserve are carried on under the supervision and direction of a two-member Operating Committee consisting of one Government member and one Chevron member. The Unit Operator, Bechtel Petroleum Operations, Inc., is under a 5-year cost-plus-award-fee contract with the Government which began August 1, 1985. Total production at NPR-1 in FY 1985 was 131,000 BOPD, 370 MMCF/D of natural gas and 680 MGAL/D of liquid gas products. Production is expected to average approximately 128,000 BOPD in FY 1986 (Government share 101,000 BOPD), 375 MMCF/D of natural gas and 700 MGAL/D of liquid gas products. In FY 1987, production is estimated at 113,000 BOPD (Government share 88,000 BOPD), 335 MMCF/D of natural gas and 590 MGAL/D of liquid gas products. The Government share of production varies by zone, averaging approximately 78 percent of total production.

Receipts from the sale of petroleum and related products are transferred to the U.S. Treasury and deposited either in the Miscellaneous Receipts or the Windfall Profits Tax accounts. Total gross receipts were about $1.3 billion in FY 1985, and are estimated to be $1.2 billion in FY 1986. It is estimated that revenues will decrease to $1.1 billion in FY 1987, with declining production and oil prices -- $24.52 per barrel in FY 1986 and $24.05 per barrel in FY 1987. Pursuant to Section 1611 of the DOD Authorization Act of 1986, P.L. 99-145, there is a one-year extension for the transfer of 30 percent of net revenues from the Reserves for FY 1986, approximately $284 million, to be deposited into the National Defense Stockpile Transaction Fund. Windfall Profit Taxes were $161 million in FY 1985, and are estimated to be $138 million in FY 1986 and $93 million in FY 1987. Chevron reimburses the Government for its share of the costs for unit operations at NPR-1, contributing approximately $24 million of such costs in FY 1985, which was deposited in the Miscellaneous Receipts account. Chevron's share of unit operation costs, included in the revenue estimates above, is estimated to be $28 million in FY 1986 and FY 1987. Additional revenues of approximately $4 million per year are deposited in the Miscellaneous Receipts account from NPR-2 lease royalties and pipeline usage fees.

The current development and exploration programs were initiated at NPR-1 in FY 1975. Since that time, 985 development wells and 38 exploratory wells have been drilled. An additional 46 development wells are scheduled for FY 1986, and 35 development wells are planned for FY 1987. Exploration of the highest potential payoff target zones will be continued in FY 1987.

The Development Facilities category is an ongoing element of the NPR-1 program, meeting construction and modification requirements in response to changing field conditions. As the field matures, changes in reservoir pressures and increasing amounts of gas and water are being encountered. The facilities requested are needed to maintain the field's maximum efficient rate of production, and enhance ultimate recovery.

NPR-3, Teapot Dome, located near Casper Wyoming, produced an average of 2,900 BOPD, 8 MMCF/D of natural gas, and 14 MGAL/D of liquid gas products in FY 1985. Production is estimated to average 2,800 BOPD in both FY 1986 and FY 1987. Secondary recovery projects are anticipated to sustain and/or increase production. Natural gas and liquid gas products will also remain level in FY 1986 and FY 1987 at 10 MMCF/D of natural gas and 15 MGAL/D of liquid gas products. Increased production due to EOR is not expected to affect production until FY 1989. Revenues at NPR-3 totaled $31 million in FY 1985, and are estimated to be about $30 million in FY 1986 and $29 million in FY 1987, subject to changes in petroleum prices and actual reservoir performance.

A program to fully develop NPR-3 was initiated simultaneously with open-up in FY 1976. The drilling program has resulted in 539 development wells drilled since that time. Twenty development wells are scheduled for FY 1986 with 52 wells planned for FY 1987. The FY 1986 program provides for a development effort of the deeper zones. This program will be continued in FY 1987. In an effort to increase production from the eastern flank of the Shannon reservoir, which is not amenable to EOR, an infill drilling program will be initiated, consisting of 30 wells in FY 1987. As many as 90 additional infill wells could be drilled in future years, if shown to be economical. The contractor operator at NPR-3 is Lawrence-Allison and Associates West Inc., which is under a 5-year cost-plus-award-fee contract through September 30, 1986. Proposals will be solicited during FY 1986 for a subsequent 5-year management and operating contractor. Selection of a contractor is anticipated in June 1986.

The EOR program at NPR-3, in FY 1987, will allow for continued operation and maintenance of the pilot projects, except for the oxygen-enhanced in-situ combustion pilot project, which has not proved to move sufficient amounts of oil to justify its continued operation. The remaining pilots will be evaluated during FY 1987 for broader implementation in FY 1988, if technically and economically feasible. This plan allows for verification of pilot results before the major expenses of full-scale development are incurred. Successful field-wide application of either of the EOR technologies to the entire Shannon Reservoir could increase the amount of recoverable oil from the present 5 percent to 20 percent of the 180 million barrels of original oil-in-place over the life of the reservoir.

To protect the natural gas resources at NOSR-3 from drainage by commercial development adjacent to the Reserve, offset drilling was begun in FY 1984 and continued through FY 1986 along the NOSR-3 southeastern boundary. The drilling program will complete the NOSR-3 gas protection plan as now envisioned. Revenues generated from the sale of natural gas produced from the offset wells are estimated at $1.6 million in FY 1986 and $5.6 million in FY 1987. Land management activities will be continued at all the NOSRs. This includes grazing management, road maintenance, and fence maintenance and construction, to be carried out under interagency agreement with the Bureau of land Management (BLM). These funds also provide for annual operation and maintenance fees for rights to water stored in BLM's Ruedi Reservoir.

DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
LEAD TABLE
FOSSIL ENERGY
NAVAL PETROLEUM AND OIL SHALE RESERVES

(Tabular dollars in thousands. Narrative material in whole dollars.)

	FY 1985 APPROPRIATION	FY 1986 APPROPRIATION	FY 1987 BASE	FY 1987 REQUEST	REQUEST vs. BASE
Reserves Nos. 1 & 2 (California)					
Operations & Maintenance	$107,215	$ 94,843	$ 94,843	$ 95,640	$ + 797
Development Drilling	20,000	17,900	17,900	22,900	+5,000
Development Facilities	33,973	8,000	8,000	8,000	---
Exploration Drilling	10,000	9,900	9,900	3,800	-6,100
Subtotal	$171,188	$130,643	$130,643	$130,340	$ - 303
Reserve No. 3 (Wyoming)					
Operations & Maintenance	$ 14,374	$ 20,086	$ 20,086	$ 15,610	$ -4,476
Development Drilling	2,245	3,950	3,950	6,754	+2,804
Development Facilities	1,250	5,047	5,047	250	-4,797
Subtotal	$ 17,869	$ 29,083	$ 29,083	$ 22,614	$ -6,469
Naval Oil Shale Reserves					
NOSRs 1 & 2	$ 990	$ 104	$ 104	$ 60	$ - 44
NOSR-3	338	3,593	3,593	5,181	+1,588
Subtotal	$ 1,328	$ 3,697	$ 3,697	$ 5,241	$ +1,544
Program Direction					
Headquarters	$ 1,671	$ 1,448	$ 1,448	$ 1,664	$ + 216
Reserves Nos. 1 & 2	3,170	3,244	3,244	2,875	- 369
Reserve No. 3 & NOSRs	698	735	735	835	+ 100
Subtotal	$ 5,539	$ 5,427	$ 5,427	$ 5,374	$ - 53
SUBTOTAL	$195,924	$168,850	$168,850	$163,569	$ -5,281
Use of Prior Year Balance	- 39,050	-155,848	-155,848	-36,461	$+119,387
TOTAL	$156,874	$ 13,002 1/	$ 13,002	$127,108	$+114,106
Staffing Total FTE's	104	104	104	95	-9

Authorization: P. L. 94-258

1/ Adjustments to the FY 1986 appropriation are shown on the table on the following page.

Department of Energy

FY 1987 Congressional Budget Request

Adjustments to FY 1986 Appropriations

	FY 1986 Conference	General Reduction	G-R-H Reduction	Total
Naval Petroleum Reserve				
Reserves Nos. 1 & 2 (California)				
Operations & Maintenance	$ 95,000	$-64	$- 93	$ 94,843
Development Drilling	17,900	-	-	17,900
Development Facilities	8,000	-	-	8,000
Exploration Drilling	9,900	-	-	9,900
Subtotal	130,800	-64	- 93	130,643
Reserve No. 3 (Wyoming)				
Operations & Maintenance	20,187	-14	- 87	20,086
Development Drilling	3,950	-	-	3,950
Development Facilities	5,047	-	-	5,047
Subtotal	29,184	-	- 87	29,083
Naval Oil Shale Reserves				
NOSR-1	110	- 1	- 5	104
NOSR-3	3,754	-	-161	3,593
Subtotal	3,864	- 1	-166	3,697
Program Direction				
Headquarters	1,515	3	- 64	1,448
Reserves Nos. 1 & 2	3,387	-	-143	3,244
Reserve No. 3	766	-	31	735
	5,668	- 3	$-238	$168,850
Subtotal, Naval Petroleum Reserve.....	$169,516	$-82	$-584	$168,850
General Reduction: Operating Expenses	-82	+82	-	-
Use of Prior Year Balances (NPR)	-155,848	-	-	-155,848
Total, Naval Petroleum Reserve	$ 13,586	-	$-584	$ 13,002
Operating Expenses	13,586	-	-584	13,002

DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
SUMMARY OF CHANGES
NAVAL PETROLEUM AND OIL SHALE RESERVES
(In thousands of dollars)

FY 1986 Appropriation Enacted	$ 13,002
FY 1987 Base	$ 13,002
Reserves Nos. 1 & 2	
- Operations & Maintenance Increase due to type of remedial jobs planned and labor costs.	+ 797
- Development Drilling Increase due to greater number of deeper, more expensive Stevens Zone wells.	+ 5,000
- Exploration Drilling Decrease due to less expensive well planned in FY 1987.	- 6,100
Subtotal	$ -303
Reserve No. 3	
- Operations & Maintenance Decrease due to reduced enhanced oil recovery, pilot project activity and administrative costs.	- 4,476
- Development Drilling Increase due to initiation of Shannon infill drilling program.	+ 2,804
- Development Facilities Decrease due to completion of pilot EOR projects in FY 1986, and no major facility requirements in FY 1987.	- 4,797
Subtotal	$- 6,469
Naval Oil Shale Reserves	
- NOSRs 1 & 2 Decrease due to closure of Anvil Points.	- 44
- NOSR-3 Increase due to type of wells required to complete gas protection plan, their operating and maintenance costs, and for mitigation of adverse environmental conditions at Anvil Points.	+ 1,588
Subtotal	$+ 1,544

Program Direction

- Headquarters..... Increase due to Federal salary adjustments and military reimbursement.	+ 216
- Reserves Nos. 1 & 2..... Decrease due to reduction in FTEs.	- 369
- Reserve No. 3 & NOSRs..... Increase due to Federal salary adjustments and military reimbursement.	+ 100
Subtotal.....	$ - 53
Total.....	$ 7,721
Use of Prior Year Balance.....	$+119,387
FY 1987 Budget Request.....	$ 127,108

	FY 1986 Appropriation	FY 1987 Base	FY 1987 Request
Reserves Nos. 1 & 2 (California)	$130,643	$130,643	$130,340

The FY 1987 budget request for the Naval Petroleum Reserves in California (NPR-1 & 2) is $130,340,000, a decrease of $303,000 from FY 1986. This request provides funding for Operations & Maintenance ($95,640,000), Development Drilling ($22,900,000), Development Facilities ($8,000,000) and Exploration Drilling ($3,800,000). Operations and Maintenance continues fairly level funding from FY 1986, reflecting stable operations and requirements. A total of 676 unit operator personnel will be funded in FY 1987.

The Development Drilling program will also continue at a relatively stable level, reflecting a more selective well identification schedule, and continued implementation of secondary recovery programs. The planned program includes 5 water injection/disposal wells and 30 production wells. Development Facilities provides for continued modifications and minor construction projects necessary to meet field production requirements. Exploration Drilling funds provide for one well in FY 1987.

Operations and Maintenance	94,843	94,843	95,640

The FY 1987 budget request for Operations and Maintenance supports day-to-day field activities necessary to continue the maximum efficient rate of production. The amount requested for FY 1987 represents level funding from FY 1986 and stabilization of operations.

a) Business Management	20,008	20,008	19,100

Business Management provides for administrative type activities of the Unit Operator. This includes financial, accounting, legal, secretarial, and related service support. In addition, it includes the purchase of safety equipment, office supplies, contractual automated engineering services, security, safety and environmental licensing, employee services and in-house ADP. A total of 226 contractor personnel are funded in this category. The decrease is attributed to reduced project funding requirements for ADP equipment.

b) Operations Management	40,405	40,405	39,040

This category funds field operations including Gas Operations and Maintenance, Production Operations and Maintenance, and Drilling Supervision. Responsibilities include operating and maintaining all production facilities, gas processing plants and supervising the development and exploratory drilling programs. Funds will provide for 310 contractor personnel in this area.

Examples of these activities include the following:

- maintenance and repair of 350 miles of pipelines, 75 tank settings, valves, pumps, gas compressors, storage tanks, etc., used in the collection, storage and distribution of oil and gas;

- production of fresh water, disposal of waste water, and the operation of the waterflood injection systems;
- surface and downhole well work as needed for approximately 1,300 producing and injection wells;
- operation and maintenance of steam operations in the Tulare Zone;
- vehicle maintenance, rental, and replacements; and
- operation and maintenance of three gas plants which process approximately 350 MMCF/D, gas injection wells (200 MMCF/D), field compressor units, dry gas facilities, and the liquid products loading rack.

The decrease in the FY 1987 request is due to continued increases in operational efficiencies and increased productivity.

	FY 1986 Appropriation	FY 1987 Base	FY 1987 Request
c) Engineering Management	$19,510	$19,510	$19,100

Engineering Management provides for technical contract services such as facility and petroleum engineers, and funds services such as drafting, construction, and telecommunications not charged to specific jobs. Also included are costs for cathodic protection, corrosion control, laboratory services, gauging, core storage, electricity, electrical maintenance, reservoir engineering and geological studies. A total of 140 contractor personnel are funded in this area.

The FY 1987 request reflects a decrease due primarily to a reduction in services related to facility modifications and construction.

d) Remedials	10,920	10,920	14,400

The Remedial budget supports major well work required to maintain existing wells in optimum producible condition and provides for recompletions; casing failures; sand consolidation; injection profile control; gas/oil ratio control; well stimulation measures; artificial lift; waterflood injectors; abandonments; and tubing replacements. The number of wells estimated to require some type of remedial program in FY 1987 is 166.

The estimate is based upon the following:

- stimulation work to remove well-bore damage and increase production (51 wells);
- well stimulation and recompletion work in connection with expanded waterflood and EOR operations (30 wells);
- remedial operations required to control excessive gas/oil ratios for Stevens wells in pressure maintained reservoirs (10 wells);

- abandonment of wells no longer capable of production (21 wells);
- tubing replacements (5 wells);
- control of excessive sand, water and gas entries (7 wells);
- well workovers, tubing, piping, electrical line hook-ups and site preparation necessary for the installation of artificial lift in Stevens Zone wells (42 wells);

The requested increase for FY 1987 is due primarily to the increased downhole work and equipment installation. (Artificial lift pumping units are funded out of Development Facilities). The average payout period for remedial jobs is estimated at less than 6 months. It is noted that the total number of well programs for subsurface artifical lifts (42) is greater than the total of artificial lifts purchased (30) under Development Facilities. This is because artificial lift equipment is salvaged from uneconomic wells, wells which may return to a flowing condition, wells converted to injection. Also, under the rod pumping unit optimization program, large sized units are replaced by surplus smaller units on Shallow Oil Zone wells and the large units are placed on Stevens wells.

	FY 1986 Appropriation	FY 1987 Base	FY 1987 Request
e) Operator Fee	$4,000	$4,000	$4,000

The Operator Fee consists of a combination of base fee and award fee paid to the management and operating contractor of the two Reserves in California. Both base fee and award fee are negotiated annually, and the latter actual award amount is based on evaluation of performance. The FY 1987 request represents the best estimate of such fees to be negotiated based upon level of effort.

Development Drilling	17,900	17,900	22,900

This category funds the drilling of development wells at NPR-1. Specific objectives to be accomplished with the FY 1987 drilling program include: (1) additional wells necessary to enhance Stevens Zone production, both from primary and waterflood recovery in the Main Body B, Northwest Stevens, and 24Z pools; (2) develop the potential production from shale in the 31S structure; (3) in the western portion of the Reserve expand development of the SOZ sands; (4) drill preliminary wells necessary to initiate an SOZ waterflood project in Section 16-12G; and (5) drill additional water disposal wells in the Tulare to handle increasing volumes of water. The FY 1987 drilling program is distributed by zone and unit cost as follows:

Zone & Type	No. of Wells	Unit Cost	Total Cost	Estimated Production (BOPD)	Revenues Annualized ($000)
Tulare (water disposal)	2	$ 126	$ 252	---	$ ---
Shallow Oil Zone (water injection-2) (producers-7)	9	258	2,322	245	2,287
Stevens Shallow (producers-21) (water injection-1)	22	817	17,974	3,150	29,411
Stevens Deep (producers)	2	1,176	2,352	300	2,801
TOTAL	35		$22,900	3,695	$34,499

	FY 1986 Appropriation	FY 1987 Base	FY 1987 Request
Development Facilities	$8,000	$8,000	$8,000

This category provides funding for facility modifications and construction needed to support continued production and development of the field. This request includes facilities to adapt to changing field conditions, respond to environmental and safety requirements, and provide support for secondary and enhanced recovery activities. This request is the same as funding for FY 1986, reflecting a stabilization of operations.

a) New Facilities	6,552	6,552	6,130

1. Artificial Lift ($4,883,000)

   Due to the response of waterfloods and declining reservoir pressures, it will be necessary to continue installation of additional artificial lift equipment in an estimated 30 Stevens wells in FY 1987 to maintain oil production. Total estimated cost is $4,883,000.

   Funds will be used to purchase variable speed electric submersible pumping units in 20 Stevens wells, mainly in the 31S Structure. Equipment to be purchased includes 150 hp multi-stage, variable speed, high voltage (approximately 2,900 VAC) centrifugal submersible pumps, equipped with gas separators and seal sections, pump cable, wellhead, control panel, and transformers.

   Also to be purchased are standard rod pumping units and related equipment for 10 Stevens wells located in the 29R, NWS, 24Z and 26R structures. Equipment to be purchased includes rod pump, beam-type pumping unit with 50 hp electric driver, concrete base, electric controls, and transformers.

2. Shallow Zone (SOZ) Waterflood Project ($832,000)

   Install pipelines and filtering equipment to waterflood the southeast flank of the SOZ. Through technical analyses, water injection is considered applicable to enhance maximum ultimate recovery from this major producing zone at NPR-1.

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3. Install Water Storage Tanks ($415,000)

Water supplies in remote areas of the Reserve are nil. In the event a fire at a tank setting or major crude oil ground spill from a pipeline or tank occurs, water would have to be trucked in by vacuum truck or county pumpers. Consequently, the risk of property loss is extremely high without adequate water supply. It is planned that several 5,000 barrel water tanks would be located along the pipeline carrying fresh water produced from the Tulare Zone for waterflood injection. The Kern County Fire Department would then have ready access to water.

	FY 1986 Appropriation	FY 1987 Base	FY 1987 Request
b) Modifications/ Improvements	$1,448	$1,448	$1,870

1. Increase Fluid Handling Capacity at 1-7R Tank Setting ($405,000)

In response to the NW Stevens waterflood, total fluid handled at 1-7R tank setting will exceed the tank setting's present capacity (approximately 18,000 barrels of fluid per day (BFPD) during FY 1988. If storage, pumping and separation facilities are not expanded, production would be severely restrained.

Facilities to be installed will include a 2,000 barrel welded surge tank with vapor recovery equipment, 3 shipping pumps, one additional separator train, interconnecting piping, and modifications to the electrical power and control system.

2. Reduce Exhaust Emission from Gas Compressors ($415,000)

Because Kern County was unable to meet federal air pollution control standards by the end of 1982, they must implement additional control measures. Steam vent casing controls and refinery flange inspection regulations have already been imposed, and several additional measures are being evaluated for adoption in 1986, and implementation in 1987. The measure that is most likely to be adopted is the requirement to reduce hydrocarbon emissions on internal combustion engines by 50 percent.

This will require a combination of catalytic convertors, air injection and carburetion changes. The projected costs for this project includes the addition of catalytic convertors plus carburetor modifications to 8 field compressors.

3. Unscheduled Facilities ($1,050,000)

Based on field experience, funding is required to respond to changes in reservoir pressure; producing rates of oil, water and gas; gas injection and waterflood requirements and environmental and safety requirements with facility modifications which cannot be identified at this time. The types of unscheduled facilities modifications generally required include the following:

1) Waste Water Disposal System
2) Oil Collection System
3) Gas Collection System
4) Tank Setting Manifolds
5) Environmental, Safety and Fire Protection

	FY 1986 Appropriation	FY 1987 Base	FY 1987 Request
c) Replacement	$ ----	$ ----	$ ----

No funds are requested for this category in FY 1987.

Exploration Drilling	9,900	9,900	3,800

The FY 1987 budget requests funding to provide for one exploratory well which has the potential of finding additional oil. A number of exploratory wells have been drilled to the Carneros, a producing zone at Elk Hills, hoping to find new pools of commercially producible hydrocarbons. Generally, these wells are drilled through the Stevens zone, in hopes of finding a structure in the Carneros which correlates to the Stevens structure above, which is capable of trapping hydrocarbons. If hydrocarbons are not found in the Carneros, the well is completed in the Stevens. Using this approach, an exploratory well was drilled in 1984 to evaluate the potential of the Carneros in the Northwest Stevens area. The well penetrated good, thick, Carneros sand with some good gas shows, but was not commercially producible. At a cost of $3,800,000, it is proposed to drill another Carneros exploratory well in this area in a better structural position. The well will be located further west southwest (less than 1 mile) and up dip in hopes of discovering new production. Preliminary evaluation of geophysical information in the area shows a potential Carneros accumulation of 30 MMCF of gas and 1.5 million barrels of condensate.

Reserve No. 3 (Wyoming)	29,083	29,083	22,614

The FY 1987 budget request for the Naval Petroleum Reserves in Wyoming (NPR-3) is $22,614,000 and provides funding for conventional oil field operations and secondary and enhanced oil recovery (EOR) activities within the areas of Operations and Maintenance ($15,610,000), Development Drilling ($6,754,000), and Development Facilities ($250,000). The FY 1987 request is a decrease of $6,469,000 from FY 1986, primarily due to reduced costs and requirements for secondary and enhanced recovery pilot projects. Operations and Maintenance shows a decrease reflecting a variety of changes in the field which are described in the O&M section, and pilot projects; Development Drilling increases are due to additional wells being drilled in the deeper zones and the initiation of a Shannon infill drilling program; and Development Facilities decreases due to completion of the construction phase of the EOR pilot projects. A total of 193 contractor/operator personnel will be funded in FY 1987, maintaining the same level as in FY 1986.

Operations and Maintenance	20,086	20,086	15,610

Operations and Maintenance provides funding for the day-to-day activities necessary to produce an oil field.

a) Production Operations and Maintenance	9,610	9,610	6,680

This activity provides funding for all production activities including supervision, labor, supplies and materials necessary to operate, maintain and repair all producing wells, petroleum and gas facilities. Included are the following:

- Petroleum handling facilities including treating, storage, pumping, flowline, gathering, sales and testing facilities.

- Gas collection, processing and injection facilities including injection wells, gathering and compression systems, distribution and sales systems, vapor recovery system and the Low Temperature Separation (LTS) plant.

- Waterflood facilities including the water well, processing and pumping facilities, distribution facilities, injection wells and remedial work.

- Maintenance, repair, and fuel for all DOE owned heavy field equipment including two vacuum trucks, a hot oil truck, two winch trucks, backhoe, forklift, grader, bulldozer, welding truck, paint truck, and trencher.

- Routine servicing and maintenance of all producing wells. This includes replacement of tubing, rods and bottom-hole pumps; maintenance and repair of surface equipment and pumping units; minor well stimulations and clean-outs; and bottom-hole pressure tests. Approximately 35-40 wells will be serviced each month.

- Chemical treatment program for the treatment of produced oil, waterflood bacteria control, scale and corrosion inhibition and paraffin control.

- Ninety-two contractor/operator personnel.

- Operation, maintenance, monitoring and analysis activities related to the EOR polymer-enhanced waterflood pilot program, and the EOR steam drive project.

The decrease in the FY 1987 request reflects a reclassification of the operation of the DOE drilling rig #1 to Development Drilling ($600,000); discontinuation of the use of the slant hole drilling rig ($240,000) as deviation drilling with the DOE rig has proven to be more cost effective; elimination of in-situ combustion pilot operation and maintenance activities ($1,450,000) as the project has not proven to be economically or technically efficient; reduced operation and maintenance requirements for the polymer waterflood pilot ($250,000) as injection of polymer has been completed and the project is in a waterflood phase; reduction in planned well stimulations ($350,000) to approximately 15 per month as engineering evaluations have determined this to be the proper level now required; and minor miscellaneous items such as supplies and equipment ($40,000).

	FY 1986 Appropriation	FY 1987 Base	FY 1987 Request
b) Buildings/Utilities/ Roads	$1,209	$1,209	$1,252

This activity provides funding for the maintenance and repair of all buildings, storage areas, utility systems, roads and grounds, including snow removal, fences, bridges, revegetation, field clean-up, trash disposal, oil spill containment, and the eiectrical power required to operate the field facilities and equipment.

The increase requested for FY 1987 reflects an adjustment for inflation.

c) Equipment	210	210	---

This category provides funding for the purchase of heavy field equipment in support of oil field operations. The FY 1987 request includes no requirement for replacement equipment.

d) Management and Technical Services	3,556	3,556	3,287

This activity provides funding for project management, engineering and geological support, corporate headquarters assistance, reservoir studies and 41 contractor/operator personnel.

Project management provides overall management of operations, including field operations, EOR analyses, technical services, scheduling, planning and training. It covers such activities as technical surveillance, cost management, quality assurance and compliance with local, state, and Federal laws and regulations. Engineering and geological support provides needed expertise in petroleum geology, reservoir engineering, EOR, drilling and production engineering and design/construction engineering. This includes such activities as analyzing production operations; developing proposals, cost estimates and designs; developing individual well procedures; and maintaining up-to-date well files and structure maps. Reservoir studies are required for analysis of the various reservoirs to optimize ultimate recovery by ensuring application of the appropriate production techniques.

The decrease in the FY 1987 request is due to more efficient operations and costs reductions imposed upon the contractor/operator in such areas as personnel, travel and training.

e) Administrative Services	3,475	3,475	3,035

This activity provides for operation of the management information system (MIS) and supporting input data control for accounting, contracts/procurement, and property management. It also includes rental of space and vehicles, office materials and supplies, liability insurance, corporate overhead, field safety, security, health and environmental protection, and 42 contractor/operator personnel.

The decrease for FY 1987 includes reduced contractor costs in personnel related areas ($300,000), reduced security costs as it has been determined that a roving guard is no longer required ($125,000), offset by a small inflation adjustment for supplies ($15,000).

	FY 1986 Appropriation	FY 1987 Base	FY 1987 Request
f) Operator Fee	$2,026	$2,026	$1,356

This category provides funding for the operator fee portion of the cost-plus-award fee contract under which operations of the Reserve are conducted. Under the terms of this contract, the operator receives a fixed base fee and an award fee determined each quarter by evaluation of performance. The decrease in the FY 1987 request reflects new procurement policies in which certain subcontracting and other costs are excluded from the fee base.

Development Drilling	3,950	3,950	6,754

Development Drilling provides funding for drilling and completing development wells, installing flowlines and electrical connections for these wells and labor costs for 18 contractor/operator personnel. The drilling program requested is based on penetration of the deepest potentially productive horizon to maximize drainage of all productive zones and in-fill drilling targeted at the shallow Shannon reservoir. Deeper drilling during FY 1984 revealed additional potential producing horizons in several formations, and extensive faulting has been shown to provide isolated, untapped accumulations adjacent to existing production. As specified by the present development policy, the normal development drilling plan targets deeper wells, commonly called "Morrison wells" or "Morrison-depth wells". This terminology indicates that the wells are drilled into the top of the Morrison formation, which is used as a marker to ensure that both the Dakota and Lakota zones have been fully penetrated. Although oil shows are occasionally encountered in the Morrison zone, previous completions have led to the decision that the Morrison is non-commercial. These wells are expected to add an approximate total of 530 BOPD to NPR-3 production, and will be drilled with the existing DOE Rig No. 1 over the period of a year.

The in-fill drilling program for the shallow Shannon reservoir consists of the drilling, completing, and hookup of 30 wells. It will yield increased primary reserves in a portion of the Shannon reservoir which is not amenable to EOR or other displacement processes. EOR does not appear to be practical in this portion of the reservoir due to

production. Since the average depth of the in-fill wells will be 500 feet, they will be inexpensive and will take two to three days each to drill and complete. The 30-well program is expected to have a payback of 12 months assuming 10 BOPD/well, and yield a Net Present Value of $6,000,000 based on a five-year cash flow and 15% discount rate.

Zone	No. of Wells	Unit Cost ($000)	Total Cost ($000)	Total Estimated Production (BOPD)	Projected Annualized Revenues ($000)
Shannon (in-fill)	30	$ 90	$2,700	300	$2,956
Second Wall Creek (in-fill)	18	175	3,150	450	4,435
Lakota-Dakota	4	226	904	80	788
Total	52		$6,754	830	$8,179

	FY 1986 Appropriation	FY 1987 Base	FY 1987 Request
Development Facilities	$5,047	$5,047	$ 250

Development Facilities provides funding for facilities projects necessary to continued development of the field by maintaining current production or recovering oil which cannot be produced by primary production methods. The FY 1987 request is for $250,000, a decrease of $4,797,000 from FY 1986. This request provides funding for Shannon Reservoir engineering and design funds.

a) New Facilities 5,047 5,047 250

1. Shannon Production Enhancement Project ($250,000)

Shannon EOR projects will be evaluated, field and modeling tests for the Shannon Oil Drainage project will be conducted, and economic analyses will be performed on each of these production methods during FY 1986. The most cost effective method, or methods, will be chosen for expansion in FY 1987. These funds will provide for the final designs, plans, specifications, and cost estimates. Construction funds, if any, will be included in the FY 1988 Budget Request.

The desired benefits of these projects are to provide adequate plans and designs to increase economically recoverable oil in the Shannon reservoir. The design would start during the third quarter of FY 1987 and be completed during the fourth quarter of FY 1987.

b) Modifications/ Improvements --- --- ---

No funds are requested for this category in FY 1987.

c) Replacement --- --- ---

No funds are requested for this category in FY 1987.

	FY 1986 Appropriation	FY 1987 Base	FY 1987 Request
Naval Oil Shale Reserves	$3,697	$3,597	$5,241

The FY 1987 budget request for the Naval Oil Shale Reserves (NOSRs) is $5,241,000, an increase of $1,544,000 over FY 1986. Funding is requested for resource protection and maintenance activities. Included in this request is funding to drill 6 offset wells at NOSR-3, operation and maintenance of 14 NOSR-3 gas wells, environmental activities and land management for all the NOSRs.

NOSRs 1 & 2	104	104	60

The FY 1987 budget request for NOSR-1 is $60,000, a decrease of $44,000 from FY 1986. The decrease is due to decommissioning of the Anvil Points facility, eliminating minor maintenance and security requirements at that site. The FY 1987 request provides for the annual operation and maintenance fee paid to the Bureau of Land Management to reserve water from the Ruedi Reservoir ($10,000), and continued land management activities at the NOSRs ($50,000).

NOSR-3	3,593	3,593	5,181

The FY 1987 budget request for NOSR-3 is $5,181,000 which provides for the drilling of 6 offset gas wells, operations and maintenance to protect the natural gas resources underlying NOSR-3, and environmental activities at Anvil Points. Planned for drilling are 3 Wasatch wells at a unit cost of $420,000, and 3 Mesaverde wells at a unit cost of $1,143,000. Based on current drilling rates and costs for required supplies and equipment, total drilling costs are estimated to be $4,829,000. This includes site preparation, completion and installation of gathering lines to deliver the natural gas to sales and shipping points. Additionally, funding of $102,000 is requested to provide operations and maintenance for the 14 wells. A total of 6 contractor personnel will be funded to carry out the drilling and maintenance activities. This request completes the 14 well plan designed to protect the southeastern portion of the NOSR-3 boundary adjacent to development by private industry. Should expansion of off-site drilling by private industry occur, it may become necessary to drill additional wells in the future to protect the remaining NOSR-3 boundary against the migration of natural gas.

Included in this request is $250,000 for the mitigation of adverse environmental conditions stemming from the spent oil shale pile at Anvil Points. Contingent upon the results of an environmental assessment to be performed in FY 1986 and Federal, state and local regulatory requirements, certain activities may be required for the spent oil shale pile. These could include groundwater monitoring, maintenance of the retention pond, maintenance of the water and pumping system or others.

Program Direction	5,427	5,427	5,374

This request provides funding to support 95 Full-Time Equivalents (FTE's) required to plan, develop, manage and execute NPOSR program activities. Funding is also included for reimbursement to the Department of Defense (DOD) for 8 military officers currently serving with the NPOSR progam.

a) Headquarters	1,448	1,448	1,664

This request provides funding for salaries and benefits ($1,124,000), travel ($100,000), training and miscellaneous contractual services to support 23 FTE's located in Washington, D.C. Headquarters personnel provide overall direction and management of the Reserves, directing planning, engineering and financial functions. Specific activities include planning and program development, budget formulation and execution, accounting, procurement and contract administration, technical management reviews, engineering oversight, environmental and safety compliance, ADP planning and oversight, and personnel and administrative support. This request includes $190,000 for reimbursement to DOD for two military officers and $250,000 for support services to provide economic analyses of development projects and capital investments, engineering and technical analyses, and design and implementation of financial systems. The requested increase is due to promotions and within grades, military retirement accrual contributions for which reimbursement has been required since FY 1985, and engineering and economic analyses required to support continued field development.

		FY 1986 Appropriation	FY 1987 Base	FY 1987 Request
b)	NPR-1	$3,244	$3,244	$2,875

This request provides funding for salaries and benefits ($2,283,000), travel ($67,000), training and miscellaneous contractual services to support 56 FTE's located at Elk Hills, California. These FTE's provide for on-site management of the field. The staffing requested provides for management, administrative support, financial management, contract administration, and petroleum, construction and drilling engineering. Major activities performed by field personnel include determining the maximum efficient rates of production for each reservoir; determining the Government's equity share of the resources; determining the number, location and type of wells to be drilled; determining and scheduling wells for the remedial workover program; establishing requirements and directing the NPRC facilities construction program; developing and directing NPRC EOR programs; determining gas injection and waterflood programs; and production and sales accounting. Included in this request is reimbursement to DOD for 4 military officers ($240,000). The decrease requested is due to a decrease in FTE's resulting from the transfer of certain functions to the management and operating contractor.

c)	NPR-3 & NOSRs	735	735	835

This request provides funding for salaries and benefits ($609,000), travel ($54,000), training and miscellaneous contractual services to support 16 FTE's located at Casper, Wyoming. These FTE's provide for the overall management of the field, and establishing the maximum efficient rates for the production of crude oil. These FTE's include staffing for management, finance and administration, petroleum engineering, and contract surveillance including procurement and property management. NPR-3 is also responsible for the daily management and monitoring of NOSR activities. Miscellaneous contractual services include rent, utilities, PCS moves, printing, materials and supplies. Included in this request is reimbursement to DOD for two military officers ($110,000). The requested increase is due to within grades and reimbursement for military retirement.

DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
OPERATING EXPENSE FUNDED PROJECT DATA SHEET
FOSSIL ENERGY

Naval Petroleum and Oil Shale Reserves

(Tabular dollars in thousands. Narrative material in whole dollars.)

Stevens Artificial Lift for FY 1987
Naval Petroleum Reserves Nos. 1 & 2
California

Total Estimated Cost (TEC) $4,883,000

STEVENS ARTIFICIAL LIFT FOR FY 1987
Naval Petroleum Reserves Nos. 1 & 2

Total Estimated Cost (TEC) $4,883,000

(Tabular dollars in thousands. Narrative material in whole dollars)

Operating Expenses (DOE)	Cumulative Prior Years OBS.	FY 1987 Estimate B/A	FY 1987 Estimate B/O	Total Cost B/A
Design and Construction	0	$1,450	$1,450	$1,450
R&D Related to Construction	0	0	0	0
Facility Operations	0	0	0	0
Direct Project Related Support Costs	0	0	0	0
Capital Equipment	0	$3,433	$3,433	$3,433
Total Operating Expenses	0	$4,883	$4,883	$4,883
Other DOE funding	0	0	0	0
Total DOE Funding	0	$4,883	$4,883	$4,883
Non-DOE funding	0	0	0	0
Total Project Funding	0	$4,883	$4,883	$4,883

Description, Objective, and Justification

Purchase and install variable speed electric submersible pumping units in 20 Stevens wells, mainly in the 31S Structure. Equipment to be installed includes 150 hp multi-stage, variable speed, high voltage (approx. 2900 VAC) centrifugal submersible pumps, equipped with gas separators and seal sections, pump cable, wellhead, control panel, transformers, and overhead power from main distribution system.

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STEVENS ARTIFICIAL LIFT FOR FY 1987
Naval Petroleum Reserves Nos. 1 & 2

Total Estimated Cost (TEC) $4,883,000

(Tabular dollars in thousands. Narrative material in whole dollars)

Description, Objectives and Justification

Purchase and install rod pumping units and related equipment in 10 Stevens wells located in the 29R, NWR, 24Z and 26R structures. Equipment to be installed includes rod pump, rods, wellhead, beam-type pumping unit with 50 hp electric driver, concrete base, electric controls, transformers, and overhead power from main distribution system.

Due to the response of the waterflood and declining reservoir pressures, it will be necessary to install artificial lift equipment in 30 Stevens wells to maintain oil production. The following tabulation shows the various Stevens Zone pools at NPR #1, the total number of producing wells, and the total number of wells estimated to require artificial lift equipment.

Structure or Pool	Total Producing Wells		Total Wells Estimated to Require Artificial Lift	
	FY 1986	FY 1987	FY 1986	FY 1987
29R	51	52	44	47
31S	187	189	76	96
NWR	75	76	46	50
24Z	30	30	10	11
26R	57	59	6	7
2B	7	7	6	7
Total	408*	413*	188	218

*Contingent upon drilling program.

The above tabulations show that it will be necessary to install artificial lift equipment to produce 30 Stevens wells in FY 1987. Based on an estimated average producing rate of 50 BOPD, the artificial lift equipment is paid out in 4.74 months.

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STEVENS ARTIFICIAL LIFT FOR FY 1987
Naval Petroleum Reserves Nos. 1 & 2

Total Estimated Cost (TEC) $4,983,000

(Tabular dollars in thousands. Narrative material in whole dollars)

(a) Schedule of Planned Activities

Activity	Start	Complete
1. Committment	1Q FY 1987	4Q FY 1987
2. Order Equipment	1Q FY 1987	4Q FY 1987
3. Receive Equipment	1Q FY 1987	4Q FY 1987
4. Detailed Design	1Q FY 1987	4Q FY 1987
5. Procure Construction Subcontractor	1Q FY 1987	4Q FY 1987
6. Construction	1Q FY 1987	4Q FY 1987

Note: Artificial lift equipment will be installed on an individual well basis as justified by reservoir conditions and maximum efficient production rate determinations. Therefore, funds for prior and subsequent years will not be addressed, and schedules for individual wells cannot be addressed.

(b) Management and Contracting

Engineering, design, construction, cost controls, etc., will be primarily the management responsibility of the Unit Operator with broad oversight monitoring direction to be given by the staff of the Owners, Department of Energy and Chevron. Contracting and purchasing arrangements have not been finalized, but will probably be fixed-price subcontract awarded on the basis of competitive bidding. Quality control will be in accordance with all agency quality control program requirements. Project is to conform in all respects to all laws, regulations and other requirements governing occupational safety and health and protection of the environment.

(c) Prior Year Achievements

Not applicable

(d) Current Year Achievements

Not applicable

(e) Reasons for Increases or Decreases

Not applicable

STEVENS ARTIFICIAL LIFT FOR FY 1987
Naval Petroleum Reserves Nos. 1 & 2

Total Estimated Cost (TEC) $4,883,000

(Tabular dollars in thousands. Narrative material in whole dollars)

(f) Cost Estimate

Engineering & Design	$ 480,000
Equipment & Installation	4,140,000
Construction Management	50,000
Utilities	213,000
TOTAL	$ 4,883,000

NOTE: Increase in operating expense, maintenance, and G&A costs are estimated to be the projected field wide lifting cost of approximately $3.50/BOPD.

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET
FOSSIL ENERGY
NAVAL PETROLEUM AND OIL SHALE RESERVES

KEY ACTIVITY SUMMARY

Key Activity	Actual Activities During FY 1985	Estimated Activites During FY 1986	Planned Activites During FY 1987
Reserves Nos. 1&2 (California, management and operating contractor is Becthel Petroleum Operations, Inc.)	Continue routine operation and maintenance activities on production, collection, storage and distribution systems; supervise drilling and downhole well work programs; operate water production, disposal and injection systems; manage enhanced recovery programs; operate and maintain three gas plants and associated facilities which process approximately 350 MMCF/D of natural gas. ($25.3 million). Completed 128 major remedial well workover jobs ($8.9 million). Continue technical services including reservoir engineering, geological studies, laboratory services, electricity, engineering, drafting, corrosion control, cathodic protection, construction and telecommunications. ($12.0 million).	Contime routine operation and maintenance activities on production, collection, storage and distribution systems; supervise drilling and downhole well work programs; operate water production, disposal and injection systems; manage enhanced recovery programs; operate and maintain three gas plants and associated facilities which process approximately 350 MMCF/D of natural gas. ($40.4 million). Complete 164 major remedial workover jobs ($10.9 million). Continue technical services including reservoir engineering, geological studies, laboratory services, electricity, engineering, drafting, corrosion control, cathodic protection, construction and telecommunications. ($19.5 million).	Continue routine operation and maintenance activities on production, collection, storage and distribution stems; supervise drilling and downhole well work programs; operate water production, disposal and injection systems; manage enhanced recovery programs, operate and maintain three gas plants and associated facilities which process approximately 350 MMCF/D of natural gas. ($39.0 million). Complete 166 major remedial well workover jobs ($14.4 million). Continue technical services including reservoir engineering, geological studies, laboratory services, electricity, engineering, drafting, corrosion control, cathodic protection, construction and telecommunications. ($19.1 million).

DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET
FOSSIL ENERGY
NAVAL PETROLEUM AND OIL SHALE RESERVES

KEY ACTIVITY SUMMARY (continued)

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
	Continue required administrative support services including financial, accounting, legal, ADP, safety and security ($15.1 million).	Continue required administrative support services including financial, accounting, legal, ADP, safety and security ($24.0 million).	Continue required administrative support services including financial, accounting, legal, ADP, safety and security ($23.1 million).
	Drilled 22 development wells ($11.3 million of prior year funds).	Drill 46 development wells with increased water injectors and EOR wells ($17.9 million).	Drill 35 development wells with water injection and producer wells ($22.9 million).
	Constructed facilities for artificial lift, modifications to current production systems and environmental and safety requirements ($4.5 million of prior year funds).	Construct facilities for artificial lift, modifications to current production systems and environmental and safety requirements ($8.0 million).	Construct facilities for waterflood recovery, artificial lift, modifications to current production systems and environmental and safety requirements ($8.0 million).
	Initiated deep test well ($8.9 million including $6.0 million of prior year funds).	Drill second half of deep test well, complete and test potential pay zones ($9.9 million).	Drill and test Carneros exploratory well ($3.8 million).
	Produced an average of 131,000 BOPD, 369 MMCF/D of natural gas, and 683 MGAL/D of liquid products.	Produce an estimated 128,000 BOPD, 375 MMFC/D of natural gas and 700 MGAL/D of liquid products.	Produce an estimated 113,000 BOPD, 335 MMCF/D of natural gas and 590 MGAL/D of liquid products.

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FY 1987 CONGRESSIONAL BUDGET
FOSSIL ENERGY
NAVAL PETROLEUM AND OIL SHALE RESERVES

KEY ACTIVITY SUMMARY(continued)

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
	Sold an average of 102,000 BOPD, 127 MMCF/D of natural gas and 547 MGAL/D of liquid products.	Sell an estimated 101,000 BOPD, 160 MMCF/D of natural gas and 604 MGAL/D of liquid products.	Sell an estimated 88,000 BOPD, 150 MMCF/D of natural gas and 509 MGAL/D of liquid products.
	Generated gross revenues of $1,267.7 million.	Generate estimated gross revenues of $1,223.4 million.	Generate estimated gross revenues of $1,070.3 million.
	Continue on-site management including engineering, construction, financial, planning, ADP, and administrative support services ($3.3 million).	Continue on-site management including engineering, construction, financial, planning, ADP, and administrative support services ($3.2 million).	Continue on-site management including engineering, construction, financial, planning, ADP, and administrative support services ($2.9 million).
Reserve No. 3 (Wyoming, contractor is Lawrence-Allison & Associates West, Inc.)	Continue routine operation and maintenance activities on production, collection, storage and distribution systems; well work; gas plant; and enhanced recovery ($5.9 million).	Continue routine operation and maintenance activities on production, collection, storage and distribution systems; well work; gas plant; and enhanced recovery ($13.1 million).	Continue routine operation and maintenance activities on production, collection, storage and distribution systems; well work; gas plant; and enhanced recovery ($9.3 million).
	Provide management and administrative support services including engineering, geology, financial, ADP, security, safety and environment ($4.0 million).	Provide management and administrative support services including engineering, geology, financial, ADP, security, safety and environment ($7.0 million).	Provide management and administrative support services including engineering, geology, financial, ADP, security, safety and environment ($6.3 million).

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FY 1987 CONGRESSIONAL BUDGET
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NAVAL PETROLEUM AND OIL SHALE RESERVES

KEY ACTIVITY SUMMARY(continued)

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
	Drilled 32 development wells to continue development and production of the Reserve ($4.1 million).	Drill 20 development wells to develop deeper zones ($4.0 million).	Drill 22 development wells to continue and enhance development of deeper zones, and 30 wells to initiate Shannon infill drilling program ($6.8 million).
	Completed construction and installation of facilities for EOR projects ($3.6 million).	Initiate 3 enhanced recovery projects to maintain and/or increase production ($5.0 million).	Develop plans and designs for expansion of Shannon enhanced recovery techinques ($.2 million).
	Produced an average of 2,907 BOPD, 8 MMCF/D of natural gas (for injection only) and 14 MGAL/D of liquid products.	Produce an estimated 2,800 BOPD, 10 MMCF/D of natural gas (for injection only) and 15 MGAL/D of liquid products.	Produce an estimated 2,800 BOPD, 10 MMCF/D of natural gas (for injection only) and 15 MGAL/D of liquid products.
	Generated revenues of $31.5 million.	Generate estimated revenues of $29.8 million.	Generate estimated revenues of $29.2 million.
	Continue on-site management including engineering, financial, planning, ADP and administrative support services ($.7 million).	Continue on-site management including engineering, financial, planning, ADP, and administrative support services ($.7 million).	Continue on-site management including engineering, financial, planning, ADP, and administrative support services ($.8 million).

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET
FOSSIL ENERGY
NAVAL PETROLEUM AND OIL SHALE RESERVES

KEY ACTIVITY SUMMARY(continued)

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Shale Reserves (Colorado and Utah)	Continue land management, security and minor maintenance activities ($.1 million).	Continue land management, security and minor maintenance activities ($.1 million).	Continue land management activities ($.1 million).
	Drill second well to protect natural gas resources at NOSR-3 ($1.2 million).	Pending data verification from FY 1984 drilling, drill 6 development wells to protect natural gas resources at NOSR-3 ($3.6 million).	Drill 6 development wells at NOSR-3 to complete natural gas resources protection plan ($4.9 million).
	Complete decommissioning of Anvil Points facility ($2.8 million).		Mitigate adverse environmental conditions from spent oil shale pile ($.2 million).
		Generate estimated revenues of $1.6 million from the sale of natural gas.	Generate estimated revenues of $5.6 million from the sale of natural gas.
Headquarters (Washington, D.C.)	Continue to provide for overall management of the Reserves including engineering, facilities, planning, financial, ADP, procurement, personnel, environmental and safety support ($1.8 million).	Continue to provide for overall management of the Reserves including engineering, facilities, planning, financial, ADP, procurement, personnel, environmental and safety support ($1.5 million).	Continue to provide for overall management of the Reserves including engineering, facilities, planning, financial, ADP, procurement, personnel, environmental and safety support ($1.7 million).

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DEPARTMENT OF ENERGY
1987 CONGRESSIONAL BUDGET REQUEST
AMOUNTS AVAILABLE FOR OBLIGATION
NAVAL PETROLEUM AND OIL SHALE RESERVES
(In thousands of dollars)

	1986	1987
Appropriation	$ 13,002	$ 127,108
Receipts and Reimbursements:		
Unobligated Balances, Start of Year	209,000	52,370
Unobligated Balances, End of Year	- 52,370	-15,909
Total, Obligations	$ 169,632	$ 163,569

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DEPARTMENT OF ENERGY
1987 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES

Naval Petroleum Reserves Nos. 1&2 - Object Class
(Dollar amounts in thousands)

		1985 Actual	1986 Estimate	1987 Estimate
Direct obligations:				
11.0	Personnel compensation:			
11.1	Full-time permanent.....	2,268	2,178	1,948
11.3	Other than full-time permanent.....	38	---	---
11.5	Other personnel compensation.....	51	88	85
11.8	Special personal services payments.....	181	240	240
	Total personnel compensation.....	2,538	2,506	2,273
12.1	Personnel benefits: civilian.....	265	240	250
13.0	Benefits for former personnel.....	7	---	---
21.0	Travel and transportation of persons.....	83	70	67
22.0	Transportation of things.....	10	24	18
23.3	Communications, utilities, and other rent.....	20	70	70
24.0	Printing and reproduction...	---	---	2
25.0	Other services.....	66,235	130,728	130,490
26.0	Supplies and materials.....	55	32	45
	Total direct obligations.....	69,213	133,670	133,215

DEPARTMENT OF ENERGY
1987 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES

Naval Petroleum Reserves Nos. 1&2 - Object Class
(Dollar amounts in thousands)

		FY 1987 Base		FY 1987 Estimate		Increase (+) or decrease (-)	
		FTE	Amount	FTE	Amount	FTE	Amount
Direct obligations:							
11.0	Personnel compensation:						
11.1	Full-time permanent	65	2,178	56	1,948	- 9	-230
11.5	Other personnel compensation	---	88	---	85	---	- 3
11.8	Special personal services payments	---	240	---	240	---	---
	Total personnel compensation	65	2,506	56	2,273	- 9	-233
12.1	Personnel benefits: civilian	---	240	---	250	---	+ 10
21.0	Travel and transportation of persons	---	70	---	67	---	- 3
22.0	Transportation of things	---	24	---	18	---	- 6
23.3	Communications, utilities, and other rent	---	70	---	70	---	---
24.0	Printing and reproduction	---	---	---	2	---	+ 2
25.0	Other services	---	130,728	---	130,490	---	-238
26.0	Supplies and materials	---	32	---	45	---	+ 13
	Total direct obligations	65	133,670	56	133,215	- 9	-455

DEPARTMENT OF ENERGY
1987 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES

Naval Petroleum Reserves No. 3 - Object Class
(Dollar amounts in thousands)

		1985 Actual	1986 Estimate	1987 Estimate
Direct obligations:				
11.0	Personnel compensation:			
11.1	Full-time permanent	429	471	530
11.5	Other personnel compensation	7	8	10
11.8	Special personal services payments	110	110	110
	Total personnel compensation	546	589	650
12.1	Personnel benefits: civilian	55	51	69
21.0	Travel and transportation of persons	43	44	54
22.0	Transportation of things	2	10	3
23.2	Rental payments to others	6	10	10
23.3	Communications, utilities, and other rent	9	12	13
24.0	Printing and reproduction	1	1	2
25.0	Other services	17,581	29,094	22,637
26.0	Supplies and materials	30	11	11
	Total direct obligations	18,273	29,822	23,449

DEPARTMENT OF ENERGY
1987 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES

Naval Petroleum Reserves No. 3 - Object Class
(Dollar amounts in thousands)

		FY 1987 base		FY 1987 Estimate		Increase (+) or decrease (-)	
		FTE	Amount	FTE	Amount	FTE	Amount
Direct obligations:							
11.0	Personnel compensation:						
11.1	Full-time permanent....	16	471	16	530	---	+ 59
11.5	Other personnel compensation.....	---	8	---	10	---	+ 2
11.8	Special personal services payments....	---	110	---	110	---	---
	Total personnel compensation.....	16	589	16	650	---	+ 61
12.1	Personnel benefits: civilian.....	---	51	---	69	---	+ 18
21.0	Travel and transportation of persons.....	---	44	---	54	---	+ 10
22.0	Transportation of things.....	---	10	---	3	---	- 7
23.2	Rental payments to others.....	---	10	---	10	---	---
23.3	Communications, utilities, and other rent.....	---	12	---	13	---	+ 1
24.0	Printing and reproduction.....	---	1	---	2	---	+ 1
25.0	Other services.....	---	29,094	---	22,637	---	- 6,457
26.0	Supplies and materials.....	---	11	---	11	---	---
	Total direct obligations.....	16	29,822	16	23,449	---	- 6,373

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DEPARTMENT OF ENERGY
1987 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES

Naval Oil Shale Reserves - Object Class
(Dollar amounts in thousands)

		1985 Actual	1986 Estimate	1987 Estimate
Direct obligations:				
25.0	Other services.....	4,225	4,565	5,241
	Total direct obligations.....	4,225	4,565	5,241

DEPARTMENT OF ENERGY
1987 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES

Naval Oil Shale Reserves - Object Class
(Dollar amounts in thousands)

		FY 1987 Base		FY 1987 Estimate		Increase (+) or decrease (-)	
		FTE	Amount	FTE	Amount	FTE	Amount
Direct obligations:							
25.0	Other services.....	---	4,565	---	5,241	---	+ 676
	Total direct obligations.....	---	4,565	---	5,241	---	+ 676

DEPARTMENT OF ENERGY
1987 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES

Headquarters - Object Class
(Dollar amounts in thousands)

		1985 Actual	1986 Estimate	1987 Estimate
Direct obligations:				
11.0	Personnel compensation:			
11.1	Full-time permanent.....	882	926	962
11.3	Other than full-time permanent.....	38	40	36
11.5	Other personnel compensation.....	13	20	20
11.8	Special personal services payments.....	260	190	190
	Total personnel compensation.....	1,193	1,176	1,208
12.1	Personnel benefits: civilian.....	117	103	106
21.0	Travel and transportation of persons.....	84	100	100
25.0	Other services.....	461	196	250
	Total direct obligations.....	1,855	1,575	1,664

DEPARTMENT OF ENERGY
1987 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES

Headquarters - Object Class
(Dollar amounts in thousands)

		FY 1987 Base		FY 1987 Estimate		Increase (+) or decrease (-)	
		FTE	Amount	FTE	Amount	FTE	Amount
Direct obligations:							
11.0	Personnel compensation:						
11.1	Full-time permanent.....	22	926	22	962	---	+ 36
11.3	Other than full-time permanent.....	1	40	1	36	---	- 4
11.5	Other personnel compensation.....	---	20	---	20	---	---
11.8	Special personal services payments.....	---	190	---	190	---	---
	Total personnel compensation.....	23	1,176	23	1,208	---	+ 32
12.1	Personnel benefits: civilian.....	---	103	---	106	---	+ 3
21.0	Travel and transportation of persons.....	---	100	---	100	---	---
25.0	Other services.....	---	196	---	250	---	+ 54
	Total direct obligations.....	23	1,575	23	1,664	---	+ 89

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DEPARTMENT OF ENERGY
NAVAL PETROLEUM AND OIL SHALE RESERVES
PROGRAM AND FINANCING SCHEDULE
(in thousands of dollars)

Identification Code 89-0219-0-1-271	1985 actual	1986 est.	1987 est.
Program by activities:			
00.01 Naval petroleum and oil shale reserves	93,566	169,632	163,569
00.03 Commercialization support	10	---	---
10.00 Total obligations	93,576	169,632	163,569
Financing:			
17.00 Recovery of prior year obligations	-8,014	---	---
21.40 Unobligated balance available, start of year	-140,351	-209,000	-52,370
22.40 Unobligated balance transferred, net	2,500	---	---
24.40 Unobligated balance available, end of year	209,000	52,370	15,909
25.00 Unobligated balance lapsing	163	---	---
40.00 Budget authority (appropriation)	156,874	13,002	127,108
Relation of obligations to outlays:			
71.00 Obligations incurred, net	93,576	169,632	163,569
72.40 Obligated balance, start of year	130,751	63,010	68,831
74.40 Obligated balance, end of year	-63,010	-68,831	-66,100
78.00 Adjustments in unexpired accounts	- 8,014	---	---
90.00 Outlays	153,303	163,811	166,300

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
SUMMARY OF PERSONNEL RESOURCES
NAVAL PETROLEUM AND OIL SHALE RESERVES
FY 1985 ACTUAL OBLIGATIONS
(Dollar Amounts In Whole Thousands)

Appropriation/Program	Full-Time Equivalents FTP	Total	FTP Base Salaries	Other Personnel Compensation	Benefits	Travel of Persons	Contractual Services	Total
Naval Petroleum and Oil Shale Reserves								
Reserves Nos. 1 & 2	66	68	$2,268	$270	$272	$ 83	$ 66,320	$ 69,213
Reserve No. 3	13	13	429	117	55	43	17,629	18,273
Naval Oil Shale Reserves	---	---	---	---	---	---	4,225	4,225
Headquarters	22	23	882	311	117	84	461	1,855
Grand Total								
Headquarters	22	23	$ 882	$311	$117	$ 84	$ 461	$ 1,855
Field Offices	79	81	2,697	387	327	126	88,174	91,711
Total	101	104	$3,579	$698	$444	$210	$ 88,635	$ 93,566

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
SUMMARY OF PERSONNEL RESOURCES
NAVAL PETROLEUM AND OIL SHALE RESERVES
FY 1986 ESTIMATED OBLIGATIONS
(Dollar Amounts In Whole Thousands)

Appropriation/Program	Full-Time Equivalents FTP	Total	FTP Base Salaries	Other Personnel Compensation	Benefits	Travel of Persons	Contractual Services	Total
Naval Petroleum and Oil Shale Reserves								
Reserves Nos. 1 & 2	65	65	$2,178	$328	$240	$ 70	$130,854	$133,670
Reserve No. 3	16	16	471	118	51	44	29,138	29,822
Naval Oil Shale Reserves	---	---	---	---	---	---	4,565	4,565
Headquarters	22	23	926	250	103	100	196	1,575
Grand Total								
Headquarters	22	23	$ 926	$250	$103	$100	$ 196	$ 1,575
Field Offices	81	81	2,649	446	291	114	164,557	168,057
Total	103	104	$3,575	$696	$394	$214	$164,753	$169,632

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
SUMMARY OF PERSONNEL RESOURCES
NAVAL PETROLEUM AND OIL SHALE RESERVES
FY 1987 ESTIMATED OBLIGATIONS
(Dollar Amounts In Whole Thousands)

Appropriation/Program	Full-Time Equivalents FTP	Full-Time Equivalents Total	FTP Base Salaries	Other Personnel Compensation	Benefits	Travel of Persons	Contractual Services	Total
Naval Petroleum and Oil Shale Reserves								
Reserves Nos. 1 & 2	56	56	$1,948	$325	$250	$ 67	$130,625	$133,215
Reserve No. 3	16	16	530	120	69	54	22,676	23,449
Naval Oil Shale Reserves	---	---	---	---	---	---	5,241	5,241
Headquarters	22	23	962	246	106	100	250	1,664
Grand Total								
Headquarters	22	23	$ 962	$246	$106	$100	$ 250	$ 1,664
Field Offices	72	72	2,478	445	319	121	158,542	161,905
Total	94	95	$3,440	$691	$425	$221	$158,792	$163,569

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DEPARTMENT OF ENERGY
1987 CONGRESSIONAL BUDGET REQUEST
1987 CONTRACT LISTING
NAVAL PETROLEUM AND OIL SHALE RESERVES
(In thousands of dollars)

	Estimated Amount
Reserves Nos. 1 & 2	
o Unit operator	$130,340
Reserve No. 3	
o Contractor/operator	$ 21,258
o Motor pool services	209
o Electric utility services	1,147
Subtotal	$ 22,614
Naval Oil Shale Reserves	
o Land management	$ 50
o Ruedi Reservoir water rights (maintenance fee)	10
o Contractor/operator (NOSR-3 gas wells)	4,931
o Environmental mitigation (spent shale pile)	250
Subtotal	$ 5,241
Program Direction	
o Technical and administrative support services	$ 250
Total NPOSR	$158,445

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DOE/MA-0084-4
Volume 7 of 7

Congressional Budget Request

Energy Conservation
Strategic Petroleum Reserve
Emergency Preparedness
Energy Regulation
Energy Information Administration

Volume 7

FY 1987

U.S. Department of Energy
Assistant Secretary,
Management and Administration
Office of the Controller
Washington, D.C. 20585
February 1986

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DEPARTMENT OF ENERGY

FISCAL YEAR 1987 CONGRESSIONAL BUDGET REQUEST

ENERGY CONSERVATION

STRATEGIC PETROLEUM RESERVE

EMERGENCY PREPAREDNESS

ENERGY REGULATION

ENERGY INFORMATION ACTIVITIES

VOLUME 7

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DEPARTMENT OF ENERGY

FISCAL YEAR 1987 CONGRESSIONAL BUDGET REQUEST

SUMMARY OF ESTIMATES BY APPROPRIATIONS

(in thousands of dollars)

	FY 1985 Actual BA	FY 1986 Estimate BA	FY 1987 Request BA
Appropriations Before The Energy and Water Development Subcommittees:			
Energy Supply Research and Development	1,967,490	1,696,298	1,254,162
Uranium Enrichment	237,956	190,512	---
General Science and Research	724,860	655,928	773,400
Atomic Energy Defense Activities	7,322,321	7,231,664	8,230,000
Departmental Administration	128,602	150,319	151,082
Alaska Power Administration	3,233	3,245	2,881
Bonneville Power Administration	284,771	330,000	276,100
Southeastern Power Administration	35,744	---	19,647
Southwestern Power Administration	31,208	29,191	25,337
Western Area Power Administration	218,230	195,910	240,309
Western Area Power Emergency Fund	---	---	---
Federal Energy Regulatory Commission	54,543	41,989	20,325
Nuclear Waste Fund	327,669	499,037	769,349
Geothermal Resources Development Fund	121	69	72
Subtotal, Appropriations Before the Energy and Water Development Subcommittees	$11,336,748	$11,024,152	$11,762,664

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DEPARTMENT OF ENERGY

FISCAL YEAR 1987 CONGRESSIONAL BUDGET REQUEST

SUMMARY OF ESTIMATES BY APPROPRIATIONS

(in thousands of dollars)

	FY 1985 Actual BA	FY 1986 Estimate BA	FY 1987 Request BA
Appropriations Before Interior and Related Agencies Subcommittees:			
Alternative Fuels Production	$ 1,169,895	$ ---	$ ---
Clean Coal Technology	---	---	---
Fossil Energy Research and Development	289,048	311,954	82,767
Naval Petroleum and Oil Shale Reserves	156,874	13,002	127,108
Energy Conservation	457,436	427,512	39,433
Energy Regulation	27,139	23,423	21,850
Emergency Preparedness	6,045	5,750	6,044
Strategic Petroleum Reserve	2,049,550	107,533	---
Energy Information Activities	60,919	57,724	59,651
Subtotal, Interior and Related Agencies Subcommittees	4,216,906	946,898	336,853
Subtotal, Energy and Water Development Subcommittees	11,336,748	11,024,162	11,762,664
Subtotal, Department of Energy	15,553,654	11,971,060	12,099,517
Permanent - Indefinite Appropriations:			
Payments to States	1,052	570	570
Total, Department of Energy	$15,554,706	$11,971,630	$12,100,087

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Department of Energy
FY 1987 Congressional Staffing Request
Total Work Force

	FY1985 FTE USAGE	FY1986 CONGR REQ	FY1987 -FY86	FY1987 CONGR REQ
ENERGY & WATER SUBCOMMITTEE				
HEADQUARTERS	4,865	4,965	-18	4,947
FIELD	9,133	9,185	111	9,296
SUBCOMMITTEE TOTAL	13,998	14,150	93	14,243
INTERIOR SUBCOMMITTEE				
HEADQUARTERS	1,353	1,304	-166	1,138
FIELD	907	896	-226	670
SUBCOMMITTEE TOTAL	2,260	2,200	-392	1,808
GRAND TOTAL	16,258	16,350	-299	16,051
ADJUSTMENT		-132	-198	-330
ADJUSTED TOTAL	16,258	16,218	-497	15,721

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL STAFFING REQUEST
TOTAL WORK FORCE

	FY1985 FTE USAGE	FY1986 CONGR REQ	FY1987 -FY86	FY1987 CONGR REQ
10:ENERGY SUPPLY RESEARCH AND DEV	937	934	-34	900
HEADQUARTERS	811	820	-28	792
FIELD	126	114	-6	108
15:URANIUM ENRICHMENT	69	66	1	67
HEADQUARTERS	58	55	1	56
FIELD	11	11	0	11
20:GENERAL SCIENCE AND RESEARCH	37	39	0	39
HEADQUARTERS	37	39	0	39
25:ATOMIC ENERGY DEFENSE ACTIVITI	2,618	2,702	131	2,833
HEADQUARTERS	496	518	9	527
FIELD	2,122	2,184	122	2,306
30:DEPARTMENTAL ADMINISTRATION	3,307	3,332	-5	3,327
HEADQUARTERS	1,721	1,726	0	1,726
FIELD	1,586	1,606	-5	1,601
34:ALASKA POWER ADMINISTRATION	37	38	0	38
FIELD	37	38	0	38
36:BONNEVILLE POWER ADMIN	3,510	3,480	0	3,480
FIELD	3,510	3,480	0	3,480
38:SOUTHEASTERN POWER ADMIN	38	48	0	48
FIELD	38	48	0	48
42:SOUTHWESTERN POWER ADMIN	186	186	0	186
FIELD	186	186	0	186
46:WESTERN AREA POWER ADMIN	1,181	1,160	0	1,160
FIELD	1,181	1,160	0	1,160
50:WAPA - COLORADO RIVER BASIN	219	219	0	219
FIELD	219	219	0	219
52:FEDERAL ENERGY REGULATORY COMM	1,617	1,659	0	1,659
HEADQUARTERS	1,617	1,659	0	1,659
54:NUCLEAR WASTE FUND	238	292	0	292
HEADQUARTERS	123	147	0	147
FIELD	115	145	0	145
56:GEOTHERMAL RESOURCES DEV FUND	2	1	0	1
HEADQUARTERS	2	1	0	1
65:FOSSIL ENERGY RESEARCH AND DEV	714	700	-161	539
HEADQUARTERS	151	135	-26	109
FIELD	563	565	-135	430
70:NAVAL PETROL & OIL SHALE RES	104	104	-9	95
HEADQUARTERS	23	23	0	23
FIELD	81	81	-9	72
75:ENERGY CONSERVATION	333	352	-134	218
HEADQUARTERS	208	227	-79	148
FIELD	125	125	-55	70
80:EMERGENCY PREPAREDNESS	74	71	0	71
HEADQUARTERS	74	71	0	71
81:ECONOMIC REGULATION	377	348	-50	298
HEADQUARTERS	377	348	-50	298
85:STRATEGIC PETROLEUM RESERVE	178	152	-32	120
HEADQUARTERS	40	27	-5	22
FIELD	138	125	-27	98
90:ENERGY INFORMATION ACTIVITIES	480	481	-6	475
HEADQUARTERS	480	481	-6	475
94:ADVANCES FOR CO-OP WORK	2	2	0	2
FIELD	2	2	0	2
GRAND TOTAL	16,258	16,350	-299	16,051
ADJUSTMENT		-132	-198	-330
ADJUSTED TOTAL	16,258	16,218	-497	15,721

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DEPARTMENT OF ENERGY

FISCAL YEAR 1987 CONGRESSIONAL BUDGET REQUEST

ENERGY CONSERVATION

VOLUME 7

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DEPARTMENT OF ENERGY

Proposed Appropriation Language

Energy Conservation

For necessary expenses in carrying out energy conservation activities, [$449,418,000] $39,433,000, to remain available until expended: Provided, That [pursuant to section 111(b)(1)(B) of the Energy Reorganization Act of 1974, as amended, 42 U.S.C. 5821(b)(1)(B), of the amount appropriated under this head, $10,319,000 shall be available] of the amounts appropriated under this head in Public Law 99-190, funds available for a grant for basic industry research facilities located at Northwestern University [without section 111(b)(2) of such Act being applicable: Provided further, That section 404 of Public Law 98-558 shall not be effective in any fiscal year in which the amount made available for low income weatherization assistance from appropriations under this head is less than 5 per centum above the amount made available in fiscal year 1985: Provided further, That $7,500,000 of the amount provided under this heading shall be available for a research and development initiative with the national laboratories for new technologies up to proof-of-concept testing to increase significantly the energy efficiency of processes that produce steel: Provided further, That obligation of funds for these activities shall be contingent on an agreement to provide cash or in-kind contributions to the initiative or to other collaborative research and development activities related to the purpose of the initiative equal to 30 percent of the amount of Federal government obligations. Provided further, That existing facilities, equipment, and supplies, or previously expended research or development funds are not acceptable as contributions for the purposed of this appropriation, except as amortized, depreciated, or expensed in normal business practice: Provided, further, That the total Federal expenditure under this proviso shall be repaid up to one and one-half times from the proceeds of the commercial sale, lease, manufacture, or use of technologies developed under this proviso, at a rate of one-fourth of all net proceeds] and funds available for a research and development initiative with the national laboratories for energy-efficient steel production technologies shall be available for other expenses of energy conservation activities. (Department of the Interior and Related Agencies Appropriations Act, 1986, as included in Public Law 99-190.)

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ADDITIONAL ADMINISTRATIVE PROVISION -- DEPARTMENT OF ENERGY

Any statutory provisions requiring the maintenance of full-time permanent Federal employees, or prohibiting actions to reduce employment levels, or otherwise establishing requirements for personnel levels of the Department of Energy or any of its offices or activities, are hereby repealed.

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DEPARTMENT OF ENERGY

FISCAL YEAR 1987 CONGRESSIONAL BUDGET REQUEST

SUMMARY OF ESTIMATES BY APPROPRIATION BY MAJOR ACTIVITY

ENERGY CONSERVATION

BUDGET AUTHORITY IN THOUSANDS OF DOLLARS

	FY 1985 Actual	FY 1986 Estimate	FY 1987 Request
Transportation	61,341	56,637	19,800
Industrial	31,706	40,096	15,623
Buildings and Community Systems	41,025	37,280	14,150
Multi-Sector	23,791	25,574	19,850
Facilities	15,681	9,608	---
Subtotal, Conservation R&D	173,544	169,195	69,423
State and Local	283,400	256,630	5,000
Policy and Management	1,747	1,687	1,792
Policy Analysis	245	---	---
Subtotal, Energy Conservation	458,936	427,512	76,215
Use of Prior Year Balances	-1,500	---	---
Use of FY 86 Deferral-(CE)EC	---	---	-36,782
Total, Energy Conservation	$457,436	$427,512	$ 39,433

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
LEAD TABLE
ENERGY CONSERVATION
(Tabular dollars in thousands. Narrative material in whole dollars.)

	FY 1985 Approp.	FY 1986 Approp.	FY 1987 Base	FY 1987 Request	Request vs Base
Buildings and Community Systems					
Operating Expenses:					
R&D Activities	36,905	31,860	31,860	11,750	(20,110)
Program Direction	2,895	3,557	3,557	2,400	(1,157)
Subtotal Operating	39,800	35,417	35,417	14,150	(21,267)
Capital Equipment	1,225	1,863	1,863	0	(1,863)
Total Buildings and Community Systems	41,025	37,280	37,280	14,150	(23,130)
Staffing, FTEs	57	71	71	45	(26)
Industrial Energy Conservation					
Operating Expenses:					
R&D Activities	27,743	38,080	38,080	13,779	(24,301)
Program Direction	1,807	2,016	2,016	1,844	(172)
Subtotal Operating	29,550	40,096	40,096	15,623	(24,473)
Capital Equipment	2,156	0	0	0	0
Total Industrial Energy Conservation	31,706	40,096	40,096	15,623	(24,473)
Staffing, FTEs	33	35	35	26	(9)
Transportation					
Operating Expenses:					
R&D Activities	56,488	51,693	51,693	18,400	(33,293)
Program Direction	1,913	2,140	2,140	1,400	(740)
Subtotal Operating	58,401	53,833	53,833	19,800	(34,033)
Capital Equipment	2,940	0	0	0	0
Plant	0	2,804	2,804	0	(2,804)
Subtotal Plant & Capital Equipment	2,940	2,804	2,804	0	(2,804)
Total Transportation	61,341	56,637	56,637	19,800	(36,837)
Staffing, FTEs	33	36	36	22	(14)

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	FY 1985 Approp.	FY 1986 Approp.	FY 1987 Base	FY 1987 Request	Request vs Base
Multi-Sector					
Operating Expenses:					
R&D Activities	21,833	24,146	24,146	19,250	(4,896)
Program Direction	292	498	498	500	2
Subtotal Operating	22,125	24,644	24,644	19,750	(4,894)
Capital Equipment	1,666	930	930	100	(830)
Total Multi-Sector	23,791	25,574	25,574	19,850	(5,724)
Staffing, FTEs	4	9	9	8	(1)
State and Local					
Operating Expenses:					
Grants/Program Activities	273,439	247,105	247,105	0	(247,105)
Program Direction	9,961	9,525	9,525	5,000	(4,525)
Total State and Local	283,400	256,630	256,630	5,000	(251,630)
Staffing, FTEs	178	180	180	100	(80)
Policy and Management					
Operating Expenses	1,747	1,687	1,687	1,792	105
Staffing, FTEs	28	21	21	17	(4)
Policy Analysis					
Operating Expenses	245	0	0	0	0
Facilities					
Plant	15,681	9,608	9,608	0	(9,608)
Operating Expenses	435,268	412,307	412,307	76,115	(336,192)
Capital Equipment	7,987	2,793	2,793	100	(2,693)
Plant	15,681	12,412	12,412	0	(12,412)
Total Energy Conservation	458,936	427,512	427,512	76,215	(351,297)
Total FTEs	333	352	352	218	(134)

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FY 1987 Congressional Budget
MAJOR ACTIVITY OVERVIEW
Energy Conservation

Energy conservation continues to play an important role in improving the nation's energy and economic efficiency. Conservation has come chiefly from increased efficency in the use of energy and from a shift in the Nation's mix of goods and services towards less energy intensiveness. Between 1973 and 1984, the amount of energy required to produce a constant dollar of gross national product declined by 24 percent; for the last two years alone there was a five percent improvement. Total energy consumption in 1984 was actually less than in 1973, and far below what would have been projected had pre-1973 trends continued. The decline among certain energy-intensive industries, played a role in reducing energy consumption during this 10-year period, but improvements in energy efficiency alone are estimated to account for more than 29 quads of cumulative energy savings since 1973.

The residential sector has shown a very sharp decrease in energy use per household compared with earlier habits and trends, contributing almost 40 percent to the 29-quad total savings achieved by the overall economy in comparison with pre-1973 trends. Better insulated houses, improved appliance efficiency, and changes in household behavior have helped.

Within the industrial sector, improvements in energy efficiency account for approximately 30 percent of the economy-wide savings. Improved industry practices and changes in the industrial production mix have both been major contributors, with the former providing most of the gain.

The commercial sector has contributed about 20 percent of the 29-quad savings through improvements in building design, lighting, refrigeration, energy storage, and computerized management of energy use.

In the transportation sector, increased auto and truck efficiency has been coupled with improved airline technical and operating efficiency to reduce energy used per mile of passenger or freight movement. This contributed the final 10 percent to the total savings, as compared to pre-1973 trends.

Because it takes time for proven conservation technologies to be adopted by both sellers and buyers, we have not yet by any means seen the total impact of conservation decisions made following the oil disruptions of the 1970's.

There are strong reasons to expect continued improvements in energy use efficiency. Conservation actions by industry often are tied directly to efforts to improve productivity and competitiveness. Even at today's lower energy prices, many more cost-effective improvements remain to be made in new cars, homes, commercial buildings, and industrial equipment. The continuing development and introduction of new technology will increase the efficiency of performance and broaden the range of conservation options available in the marketplace.

While efficiency continues to improve, total U.S. energy consumption rose during 1984 for the first time in 5 years. This increase, to 74 quads, represents a rise of about 4 percent from 1983 levels. This increase is attributed, in part, to the Nation's increasing economic growth, which expanded to 7 percent in 1984, and to declining prices, which made conservation actions seem less economically attractive and softened attitudes towards the benefits of conservation. This rise in total energy consumption serves as a reminder that conservation must continue to play a prominent role in national energy policy to ensure the Nation's long-term energy security and economic well-being.

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Many important opportunities remain to reduce future energy demands cost-effectively through innovation and the introduction and commercial application of advanced, highly efficient, energy-related technologies. A doubling of our efficiency gains over the past decade (in percentage terms) is probably economically feasible by the year 2010, even if current energy prices remain stable or experience a moderate decline. This will not require large government outlays. As conservation takes hold, it does so by being the most cost-effective of all energy options in a great variety of circumstances within all energy consuming sectors.

The Energy Conservation section of the Congressional Budget includes two major program areas, Conservation Research and Development and the State and Local Assistance Programs.

MISSION AND OBJECTIVES OF ENERGY CONSERVATION RESEARCH AND DEVELOPMENT

The mission of the Conservation Research and Development Program is to encourage the full development of energy conservation's potential and to provide a robust array of technology options for that will strengthen the technology base on which industry can draw in developing future new products and processes for the commercial market.

Accordingly, the program carries out a broad range of activities, each designed to contribute in a significant way to the technical and economic environment necessary to support this development. These activities focus primarily on basic and applied research, technology development, technical assistance, and information activities. They also include energy management within the federal establishment, and the development of guidelines and standards where required by law.

The objectives of the R&D activities are to: (1) improve the efficiency by which resources are used in the economy, focusing on energy (and thereby improving the competitiveness of energy-intensive industries); (2) increase the flexibility and diversity of available energy end-use technologies, focusing in particular on alternatives to those currently based exclusively on one form of energy, such as petroleum in transportation; (3) ensure the resiliency and reliability of energy end-use systems; and (4) understand the health and safety implications of conservation related technologies.

The focus of energy conservation is on improving the efficiency of energy use; therefore, the Conservation Research and Development Program is organized basically by energy-using sectors of the economy. These include residential and commercial buildings and community systems, transportation, and industry. Energy use in 1985 was distributed about evenly among these three sectors. In addition to these categories, there are many technologically related aspects of energy use which are common to all sectors of the economy. Combustion is one example, friction and wear is another, and the use of advanced materials in energy related equipment and high-temperature environments is a third. Hence, a fourth element of the Conservation R&D program addresses the cross-cutting aspects of energy use. This fourth multi-sector element of the program also serves as the clearinghouse for innovative concepts and inventions originating in the private sector.

In FY 1987, the Conservation Research and Development Program will carry out activities in the following budget categories:

- o Buildings and Community Systems
- o Industrial Programs
- o Transportation
- o Multi-Sector

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Reductions in the Energy Conservation R&D programs are proposed in the 1987 budget consistent with budgetary constraints and the stability of our near and mid term energy supply and demand forecasts. Although provisions have been made to satisfy the requirements of the statutory programs, it is planned that legislation will be introduced to eliminate regulatory requirements that conflict with a free-market approach to providing conservation signals to energy users.

One of the primary goals of all the applied research areas in Conservation is to effectively transfer technology from Federal and university laboratories to private industry. The earlier industry is involved, and the more directly that the research agenda is guided by the companies' own economic self-interest, the more effective the transfer is likely to be. A funding approach will be explored in 1987 as an effort to increase the private leverage of Federal funds, provide industry involvement in the choice of technology development directions, and help limited Federal funds to support emerging industry more broadly. This approach is to solicit industry interest in joining together to form cooperative R&D ventures within broad sectors of the economy. This ultimately could transform most or all of the industry-performed work in Conservation, and can facilitate transfer of advanced technology to the private sector. Most areas of industry-performed Conservation R&D work offer excellent opportunities for this approach.

Cooperative ventures are potentially suited to this technology-transfer/proof-of-concept stage of activity. By law, and because of the competitive interests of the companies involved, their activity is restricted to pre-competitive (i.e., not product-specific) research and development. The cooperative ventures would be designed to meet this criterion. This matches Administration policy of supporting longer-term generic research that benefits the public, but not using tax dollars to subsidize a particular company's development of proprietary products. Support of industry-cooperative R&D allows limited Federal funds to strengthen a whole industry and not just one or a few selected players. This can clearly benefit emerging industries as well as more mature ones.

The voluntary organization of such cooperative ventures by industry would serve as a strong indicator for the proper direction of government-sponsored R&D. The pooled funding will also provide a greater degree of private cost-sharing for applied R&D, allowing Federal dollars to go farther.

If the cooperative venture is defined broadly, with a substantial membership base and level of funding, it can perform or sponsor technology development projects in a number of related areas. This serves to further reduce the risk to the participants, ensuring better chances for shared successes that will repay each party's investment.

The Department will not place tight constraints on the types of cooperative opportunities to be considered, but key characteristics of the concept include:

- Significant leveraging of Federal funding;
- The support that the Department would provide should not displace support that would otherwise come from the private sector;
- The Federal government will share in royalties or other repayment profits from the venture, proportionate to its constribution to the venture;
- Participation of two or more companies;
- Preferably ventures should include companies that have previously proven themselves successful in obtaining and managing co-funding from private sources.

As industry develops responses to this opportunity, the Department will consider reprogramming of monies to allow participation in promising cooperative ventures.

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FY 1987 Congressional Budget
DECISION UNIT OVERVIEW
Buildings and Community Systems

Energy conservation in the buildings sector continues to make a significant contribution to the nation's improved energy situation. Energy consumption in buildings has been reduced 20 percent per unit of floor space since 1972 and we expect this trend to continue. Since the buildings sector uses approximately one-third of the energy consumed by our economy, such conservation may be viewed as a significant energy resource. Consequently, improved building energy efficiency is an important element of a balanced and diverse energy resource system.

The mission of the Buildings and Community Systems program is to encourage full development of the potential for economical energy conservation in residential and commercial buildings. Accordingly, program activities focus on research to advance the technologies needed for private sector development of energy efficient buildings, building equipment, and building energy supply systems. Other activities include transfer of the results of this research to industry and consumers, implementation of Congressionally mandated building energy conservation programs, and coordination of the Federal government's "in-house" energy conservation activities.

In FY 1987 the Buildings and Community Systems program will carry out activities in the following subprograms.

- o Building Systems
- o Technology and Consumer Products
- o Analysis and Technology Transfer
- o Appliance Standards
- o Federal Energy Management Program

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
LEAD TABLE
ENERGY CONSERVATION
BUILDINGS AND COMMUNITY SYSTEMS
(Tabular dollars in thousands. Narrative material in whole dollars.)

	FY 1985 Approp.	FY 1986 Approp.	FY 1987 Base	FY 1987 Request	Request vs Base
Buildings and Community Systems					
Building Systems	$14,560	$12,099	$12,099	$ 3,500	$ -8,599
Community Systems	5,390	3,727	3,727	0	-3,727
Urban Waste	980	0	0	0	0
Technology and Consumer Products	9,997	10,053	10,053	5,000	-5,053
Analysis and Technology Transfer	980	2,559	2,559	1,000	-1,559
Appliance Standards	2,450	1,863	1,863	1,200	-663
Federal Energy Management Program	1,274	1,187	1,187	1,050	-137
Residential Conservation Service	1,274	372	372	0	-372
Program Direction	2,895	3,557	3,557	2,400	-1,157
Subtotal					
Operating Expenses	39,800	35,417	35,417	14,150	-21,267
Capital Equipment	1,225	1,863	1,863	0	- 1,863
Total Buildings and Community Systems	$41,025	$37,280	$37,280	$14,150	$-23,130
Staffing Total FTE's	57	71	71	45	-26

Authorization: P.L. 93-577, as amended, Energy Research and Development Act
P.L. 94-163, Part E (Sec. 381), Energy Policy and Conservation Act
P.L. 94-385, Energy Conservation and Production Act
P.L. 94-438, Energy Reorganization Act of 1974
P.L. 95-618, (Title I), Energy Tax Act
P.L. 95-619, (Sec. 224, Parts 1, 2, 4; Sec. 210-223; and Sec. 501, 541-551), National Energy Conservation Policy Act
P.L. 95-620, Power Plant and Industrial Fuel Use Act of 1978
P.L. 96-294, Energy Security Act
RCS: National Energy Conservation Policy Act, as amended by Energy Security Act;
CACS: Energy Security Act

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Department of Energy

FY 1987 Congressional Budget Request

Adjustments to FY 1986 Appropriations

	FY 1986 Conference	General Reduction	Management Initiatives	Pay Cost Restoration	Gramm-Rudman-Hollings Reduction	Adj. Approp. Total
Buildings & Community Systems						
Building Systems	$13,000	$ -78	$ -280	$ ---	$ -543	$12,099
Community Systems	4,000	-20	-86	---	-167	3,727
Residential Conservation Service	400	-2	-9	---	-17	372
Technology & Consumer Products	10,800	-63	-232	---	-452	10,053
Appliance Standards	2,000	-10	-43	---	-84	1,863
Analysis & Technology Transfer	2,750	-17	-59	---	-115	2,559
Federal Energy Management Program	1,275	-8	-27	---	-53	1,187
Capital Equipment	2,000	-10	-43	---	-84	1,863
Program Direction	3,200	-19	-82	618	-160	3,557
Subtotal, Buildings and Community Systems	$39,425	$ -227	$ -861	$ 618	$-1,675	$37,280
General Reduction:						
Operating Expenses.....	$ -217	$ 217	$ ---	$ ---	$ ---	$ ---
Capital Equipment	-10	10	---	---	---	---
Total, General Reduction	$ -227	$ +227	$ ---	$ ---	$ ---	$ ---
Management Initiatives:						
Operating Expenses.....	$ -818	$ ---	$ 818	$ ---	$ ---	$ ---
Capital Equipment	-43	---	43	---	---	---
Total, Management Initiatives	$ -861	$ ---	$ 861	$ ---	$ ---	$ ---
Pay Restoration	618	---	---	-618	---	---
Total, Buildings and Community Systems	$38,955	$ ---	$ ---	$ ---	$-1,675	$37,280
Operating Expenses ...	$37,008	$ ---	$ ---	$ ---	$-1,591	$35,417
Capital Equipment	1,947	---	---	---	-84	1,863

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
SUMMARY OF CHANGES
ENERGY CONSERVATION
BUILDINGS AND COMMUNITY SYSTEMS
(In thousands of dollars)

FY 1986 Conference mark less G-R-H adjustment.....	$37,280
Built in increases and decreases:	
None	0
FY 1986 Adjusted and FY 1987 base	$37,280
Program increases and decreases:	
Buildings Systems	
o Building materials research	-1,024
o Building subsystems research	
-Walls research	- 476
-Fenestration research	-1,489
-Lighting requirements research	- 186
-Indoor air quality, infiltration and ventilation.....	+ 132
o Building systems integration research	
-Commercial building systems interactions	- 930
-Residential building systems interactions	- 838
-Performance calculations	- 744
-Building energy control systems	- 93
o Building energy retrofit research	
-Single family retrofit research	- 736
-Multifamily retrofit research	- 702
-Commercial building retrofit research	- 796
o Energy conservation standards and guidelines	- 717
Subtotal	$-8,599
Community Systems	
o District heating and cooling	
-Systems and components research	-1,020
-Feasibility studies	- 657
o Community energy systems integration	
-Urban Consortium	-1,864
-Site design	- 186
Subtotal	$-3,727

Technology and Consumer Products	
o Thermally activated heat pumps	- 364
o Advanced refrigeration systems	-2,131
o Combustion systems research	- 655
o Lighting equipment research	- 962
o Equipment integration research	- 941
Subtotal	$-5,053
Analysis and Technology Transfer	
o Technical assessment and analysis	- 50
o Utility applications research	- 951
o Rural Housing Amendments Act study	- 308
o Research utilization	- 450
o Technology transfer	+ 200
Subtotal	$-1,559
Appliance Standards	
o Test procedures development and consumer education	- 790
o Appliance standards development	+ 127
Subtotal	$- 663
Federal Energy Management Program	
o Federal planning, reporting and evaluation	+ 100
o Technical guidance and assistance to Federal agencies	- 237
Subtotal	$- 137
Residential Conservation Service	
o Commercial and Apartment Conservation Service	- 372
Subtotal	$- 372
Program Direction	
o Price out of staffing	-1,157
Subtotal	$-1,157
Capital Equipment	
o Laboratory and field test equipment	-1,863
Subtotal	$-1,863
FY 1987 budget request	$14,150

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
NARRATIVE JUSTIFICATION
ENERGY CONSERVATION
BUILDINGS AND COMMUNITY SYSTEMS

The goal of the Buildings and Community Systems (BCS) program is to advance technologies that will increase the energy efficiency of the built environment. This goal is being achieved through a comprehensive research program, transfer of the results of this research to the private sector, and implementation of DOE's statutory responsibilities in the buildings area.

Accomplishments for FY 1985 and anticipated accomplishments for FY 1986 include:

- Developed and promulgated interim standards for new commercial buildings and new Federal residential buildings (including manufactured housing).
- Initiated a collaborative effort to predict, measure and control radon concentrations in homes in coordination with an epidemiological study by DOE's Office of Health and Environmental Research.
- Completed a systems integration study of multifamily midrise and highrise buildings and published a handbook of research findings as a guide to energy-conserving designs.
- Completed guidelines for energy efficient site-built single family residences and produced manuals and slide rules for designers and builders.
- Validated a laboratory method for measuring the static thermal performance of large, complex wall sections. Developed an improved method for testing and predicting the performance of complex fenestration designs.
- Completed a detailed assessment of technical issues concerning ureaformaldehyde foam insulation.
- Developed scope of work, organized the research, and identified methods to renovate old steam district heating systems using the Scranton, Pennsylvania, system as a laboratory. Completed drilling, water characteristics analysis, and tests of heat exchangers for a mine-water heat recovery project.
- For district heating and cooling systems initiated research aimed at enhancing the energy delivery capacity of fluids using drag reduction additives (slippery water) and phase change material (liquid ice) for increased cooling capacity.
- In cooperation with the communities involved, completed assessment of the applicability of district heating and cooling in 15 additional communities.

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- Supported the Urban Consortium Energy Task Force in conducting 20 local government conservation energy projects and 4 regional workshops to share the results of successful projects with other local communities.

- Through seven workshops conducted by the U.S. Conference of Mayors, disseminated information and technology about district heating and cooling to city officials, planners, developers and engineers to assist them in applying district heating and cooling systems to their communities.

- Completed design and laboratory validation of two important heat pump developments: a prototype optimized ground-coupled heat pump mechanical package, and a breadboard advanced cycle absorption heat pump for residential use which verified the performance potential of the selected cycle.

- Completed evaluation of alternate cycle concepts using non-azeotropic refrigerant mixtures and initiated laboratory experiments to develop refrigerant separation techniques for composition control.

- Completed characterization of corrosion and physical-chemical behavior of selected stainless steels as part of the effort to solve the corrosion problem in condensing heat exchangers.

- Improved the efficiency of fluorescent lamps by nearly 35 percent by combining the effect of both isotope enrichment and magnetic enhancement.

- Issued final rules amending test procedures for water heaters to include heat pump water heaters, and amending the procedures for central air conditioners to reduce testing burden and increase accuracy.

- Established a Building Energy Accounting System (BEAS) to provide readily available, computerized historic data and projections on the characteristics, energy consumption, and energy conservation of buildings, and to publish an annual Building Energy Data Book.

- Developed and implemented a program that in cooperation with the utility industry will make available needed analytical tools and data that can be used to determine the impact of energy conservation on utility long-term demand-side planning.

- Conducted research that led to the incorporation of more effective equipment retrofit measures in existing low-income weatherization programs; determined that such measures can substantially increase the energy savings realized.

- Initiated cooperative research with the Department of Housing and Urban Development directed at conserving energy in existing, Federally assisted housing.

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- o Developed standard protocols for coordinating retrofit research in residential buildings and participated in cost-shared research directed at measuring the effectiveness of single-family retrofit activities.

- o Identified technical and behavioral problems that may be reducing the effectiveness of building retrofit measures.

Accomplishments in the area of Residential Conservation Service:

Over a million Residential Commercial Service audits were provided in FY 1985, bringing the total to more than 4 million since program inception. Commercial and Apartment Conservation Service program implementation has continued. About half the States now have approved plans for Commercial and Apartment Conservation Service program implementation.

Studies have been initiated to identify promising program alternatives and means of assisting States, utilities, or community level organizations in implementing energy conservation programs. These studies also support the evolution of the Federal role from a regulatory basis to encouraging voluntary participation. The studies suggest that a flexible and multifaceted approach, facilitated by Federally-sponsored technical and information resources, is needed to assist States, utilities, and others in the operation of conservation and demand-side management programs to increase energy efficiency in residences and small-to medium-sized commercial buildings. Examples include:

- Qualitative Analysis of alternative audits, financing, direct installation and marketing programs offered by utilities in California, Florida, Michigan, Nebraska, Oklahoma and Texas.

- Evaluation of Florida Power and Light (FPL) "HELP" program, which includes a simplified audit and subsidized installation of low-cost measures, to assess auditor marketing skills, extent of customer action on HELP recommendations, and relationship to other FPL residential programs.

- Evaluation of General Public Utilities (GPU) "RECAP" program, which offers selected Pennsylvania and New Jersey residents retrofits financed through shared savings. Analysis focuses on contracting arrangements, marketing, energy savings, behavioral and comfort changes, and shifts in electrical load shape.

- Analysis of key operational and management factors in the "Weatherize Portland" (ME) program to identify those factors contributing to the success of this comprehensive multi-partner program which incorporates the RCS audit within a full-service program.

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- An update of the evaluation of the RCS program to provide current information on overall program results, the effects of rebates, low-interest loans, direct installation, and other corollary utility programs on RCS participation, and a survey of States' and utilities' plans to continue with RCS or implement follow-on programs.

As electric utilities place more emphasis on demand-side activities, and other State and local program implementers seek solutions to energy problems, there is an interest in and need for a wide range of information and technology transfer. DOE has assisted in meeting this need through a variety of activities. For example:

- DOE, the Electric Power Research Institute and the Alliance to Save Energy co-sponsored the Second National Energy Efficiency Conference. This was held in conjunction with an energy exposition held in San Francisco, California and sponsored by the Pacific Gas and Electric Company in May 1985. Over 700 utility professionals, government officials and corporate energy managers attended. Topical sessions covered new strategies for program design, evaluation, technical developments, policy issues and marketing. Plenary sessions also provided a variety of national perspectives by representatives from energy industries, universities, Congress and the Executive Branch.

- In September 1985, DOE sponsored the "Conference on Commercial and Apartment Conservation Programs" in Minneapolis, Minnesota. Representatives from State energy offices, utilities, local housing authorities and energy service companies attended. The majority of the sessions addressed some aspect of marketing: identification, segmentation, approaches, or other issues and techniques. Other sessions presented commercial/multifamily research results and actual program experience.

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Departmental Request

Funding requested for the Buildings and Community Systems program in FY 1987 is $14,150,000. The reduction of $23,130,000 compared to the FY 1986 appropriation results from the discontinuation of funding for capital equipment and one subprogram, the transfer of a second subprogram, and the discontinuation of a number of activities in the remaining subprograms. The Community Systems subprogram is being discontinued after funding district heating and cooling feasibility studies in more than 50 communities, showing the potential of this technology, and encouraging other communities to undertake such studies on their own. The Residential Conservation Service subprogram has been transferred to the Office of State and Local programs and is discussed in that section of the budget request.

Funding is requested in FY 1987 for Program Direction and for activities in the following subprograms:

- o Building Systems
- o Technology and Consumer Products
- o Appliance Standards
- o Analysis and Technology Transfer
- o Federal Energy Management Program

Building Systems.....$3,500,000

The objective of the Building Systems subprogram is to encourage optimal use of energy in U.S. buildings. Long-term generic research is conducted to advance the knowledge of energy transfer phenomena in buildings and the results of that research are provided to practitioners in the building industry. The FY 1987 budget request for this subprogram is $3,500,000. This represents a reduction of $8,599,000 compared to the FY 1986 appropriation. This funding level will allow research and development in the Building Subsystems and Standards and Guidelines activities to be continued.

The Building Subsystems research activity addresses the energy-related characteristics of the several elements and components that, when assembled, constitute a building system. A significant portion of the research is directed toward determining analytical relationships among physical properties of individual subsystems and the flow of energy and mass (e.g., moisture and air) through the subsystems. These analytical relationships then form the bases for models used to predict the energy performance characteristics of subsystems. Laboratory and field testing programs are conducted to validate these models and to establish data bases to be used by practitioners in the building community. Research in this activity is also directed toward providing a supporting technical basis for the development of guidelines and voluntary standards for use in designing more energy efficient building elements. In FY 1987 efforts in this key activity will include research in walls; roofs; and indoor air quality, infiltration, and ventilation.

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Walls research is conducted to determine those characteristics of walls that influence the conservation effectiveness of buildings. The research is divided into thermal testing of walls; evaluation of thermal wall anomalies; an evaluation of mass influence on energy utilization; and the study of foundation design and earth contact. Research in FY 1986 includes the development of dynamic thermal testing protocols; analysis of thermal mass modeling and prediction techniques; measurement, modeling, and evaluation of thermal bridges, breaks, convective loops and other thermal anomalies; and the planning for future foundation and earth contact research. Research in FY 1987 will emphasize studies of innovative wood, lightweight concrete and other foundation insulating techniques. Moisture effects on overall energy performance of walls and foundations will be evaluated and development of analytical models for predicting foundation thermal performance will be initiated. Dynamic testing of innovative wall constructions will be initiated, and the effect of thermal mass in multifamily residential structures will be evaluated.

In FY 1986, roof research focuses on improving energy efficiency and durability characteristics of roof systems. Research areas include developing an integrated mathematical model to predict thermal performance of composite roofs, thermal performance testing of high and low efficiency roofs under field conditions, and developing diagnostic probes for quantitative moisture measurements in roof systems. In FY 1986, a roof model is being developed to simulate thermal and moisture transport behavior of roofs. In FY 1987, this model will be expanded to include effects of mechanical and structural stress. In FY 1986, development of non-destructive and intrusive moisture measuring instruments using electrical capacitance and resistance is continuing. These instruments will be completed and calibrated in FY 1987. In FY 1986, studies of the effects of solar absorptance and ultraviolet radiation on thermal performance will be completed. In FY 1987, effects of thermal bridging and wet insulation on thermal performance will be evaluated. An industry advisory panel is assisting in developing roof research plans.

Indoor air quality, infiltration, and ventilation research in FY 1986 includes collection of infiltration and ventilation measurements in large buildings. Collaborative interagency efforts to study the generation and distribution of biological aerosols is continuing. Development and evaluation of infiltration, ventilation, and air leakage measurement systems for multifamily buildings is being completed. Development of a simplified multizonal infiltration and ventilation model is continuing and a study of occupant behavior effects on infiltration and ventilation performance is being initiated. Assessment of ambient indoor radon levels, characterization of radon building entry mechanisms, and field studies on radon control and mitigation are continuing. Research to develop, test, and evaluate energy efficient and cost-effective strategies to maintain indoor air quality is continuing, and interagency efforts to model indoor air quality are being initiated. Collaborative efforts to develop voluntary consensus standards for indoor air quality, and interagency coordination of indoor air quality research are continuing. In FY 1987, research will continue and the newly initiated FY 1986 efforts will be expanded in all the areas described above except the study of occupant behavior effects on infiltration and ventilation performance. That study will be discontinued.

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The Standards and Guidelines activity is a Congressionally mandated, multiyear effort to develop energy conservation standards and guidelines for new commercial and residential buildings (including manufactured housing). The Energy Conservation Standards for New Buildings Act, as amended, requires that DOE develop and promulgate interim standards and then final standards for each classification. The standards are mandatory for Federal agencies only. They are to serve as voluntary guidelines for the non-Federal sector. The Act also requires DOE to conduct demonstration projects for each standards activity and report the results to the Congress. FY 1987 funding will be used to complete development and prepare the Notice of Proposed Rulemaking for the interim voluntary residential and manufactured housing standards.

Technology and Consumer Products.....$5,000,000

The purpose of the Technology and Consumer Products subprogram is to provide the technological basis for improved, energy efficient building energy conversion processes and equipment. Research is conducted to investigate, develop, and test generic technical approaches and engineering concepts with potential for substantially increasing the efficiency with which raw energy in the form of oil, gas, solid fuels and electricity is converted into useful energy in the form of heat, refrigeration, and lighting.

The FY 1987 budget request for Technology and Consumer Products is $5,000,000. This represents a reduction of $5,053,000 compared to the FY 1986 appropriation. This reduction is achieved by discontinuing research in the technologies supporting combustion systems and advanced refrigeration systems, and by curtailing research in lighting equipment technologies. The greatest promise for significant energy savings in the Technology and Consumer Products subprogram is in the areas of thermally activated heat pumps and advanced lighting equipment. Therefore, funding is requested for continued research in these areas.

Thermally Activated Heat Pumps: This activity consists of research on engine driven and absorption heat pump systems. During FY 1986, proof-of-concept testing on novel advanced cycle absorption heat pumps using conventional fluids and ternary mixtures, research on free piston Stirling (FPS) and internal combustion (IC) engine driven heat pumps component fabrication, and supporting research on FPS engine/compressor dynamic interaction and model development continued. In FY 1987, proof-of-concept testing of novel advanced cycle absorption heat pumps, research on novel sealing concepts for engine driven systems, field evaluation of a commercial IC engine heat pump, and evaluation of low loss hydraulic compressor Stirling engine driven heat pumps will continue. Successful research in this area has the potential of saving about 4.0 quads of energy annually.

Lighting Equipment Research: This activity consists of research on light sources and the optimized integration of lighting system components into the total building. During FY 1986, research was focused on characterizing lamp discharge efficiency improvements through experimental, diagnostic investigation of low and high pressure discharge phenomena. In FY 1987, research will continue to investigate this improvement in efficiency of magnetically loaded lamps and electrodeless, surface wave (gigahertz) lamp discharges. Initial work will concentrate on lamp driving concepts and

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prototype development of a scaled down electrodeless high intensity discharge lamp with novel gas radiator fills. Non-intrusive diagnostic techniques for characterizing lamp discharges will be developed and applied, and lighting system components for advanced designs will be characterized for designed building spaces. No funding is requested for studies of efficiency improvement through mercury isotope enrichment or for development of mercury isotope separation processes since the comparative evaluation of separation techniques will be completed with FY 1986 funding. Successful lighting equipment research has the potential of saving 1.5 quads of energy.

Analysis and Technology Transfer.....$1,000,000

The purpose of the Analysis and Technology Transfer subprogram is to ensure that research results and information on conservation in buildings are transferred to the private sector, and to conduct the necessary analysis to support program planning. The FY 1987 budget request for this subprogram is $1,000,000, a reduction of $1,559,000 compared to the FY 1986 appropriation. This funding will support centralized technology transfer activities and continuation, at a reduced level, of the analysis activities. It includes continued support for U.S. participation in International Energy Agency (IEA) agreements, technology assessments, and policy and program analysis.

The requested funding is necessary to ensure that U.S. citizens benefit fully from BCS programs. The analysis activity ensures that the most beneficial building energy conservation research projects are conducted and that they are conducted to most effectively complement private sector activities. The technology transfer activity not only ensures that technical knowledge is quickly, effectively, and efficiently disseminated, but that knowledge about what building conservation programs work for utilities, local governments and the private sector is made easily accessible. In FY 1987, technology transfer will provide a capability to monitor research progress to ensure early, effective transfer of the results, publish state of the art and cross-cutting (i.e., integrating results across programs) reports, and coordinate with private sector associations and other organizations.

No FY 1987 funding is requested for utility applications research which is being discontinued, or for the Rural Housing Amendments Act Study since it is being completed with FY 1986 funds.

Appliance Standards.....$1,200,000

The FY 1987 budget request for Appliance Standards is $1,200,000. This represents a reduction of $663,000 compared to the FY 1986 appropriation. This reduction is achieved by discontinuing research in appliance test procedures. Appliance standards development is maintained at approximately the same level as in FY 1986.

The purpose of the Appliance Standards activity is to conduct the analysis and regulatory activities necessary to comply with the Energy Policy and Conservation Act (EPCA), as amended. In 1987, the Department will conduct research and analysis on the impacts of appliance standards including a reevaluation of those previously issued. This reevaluation is required by a recent U.S. Court of Appeals decision and by section 325(h) of EPCA which

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specifies that it be completed by FY 1988. The analysis will consider the energy performance and cost of advanced prototype models of the covered appliances as well as foreign models; the economic justifiability of standards, including their impact on manufacturers; and the energy savings that result from any standards regulation.

Federal Energy Management Program.....$1,050,000

The Federal Energy Management Program (FEMP) is a Federally directed effort to reduce energy use by Federal agencies, improve utilization efficiency, conserve scarce fuel, and transfer energy management experience among Federal agencies, IEA member nations, State and local governments, and the private sector. The FY 1987 budget request for FEMP is $1,050,000. This is a reduction of $137,000 compared to the FY 1986 appropriation. It will be achieved by reducing the technical guidance and assistance provided to other Federal agencies. Evaluation of shared savings contracting will be increased.

The requested FY 1987 funding is necessary to continue the implementation of Federal laws and Executive Orders pertaining to energy conservation in the Federal government; prepare annual reports to the President and Congress; monitor Federal agency conservation activities and performance; assist agencies in developing and implementing energy conservation programs; and provide them with technical guidance (i.e., "How to" manuals, workshops on "Life Cycle Cost" analyses and "Energy in Design," courses on shared-savings contracting, and employee awareness programs). Training materials and workshops for Federal architects and engineers to acquaint them with the recently issued mandatory standards for existing buildings will be continued and will be opened to private architectural and engineering firms. Support will be provided to Federal agencies to demonstrate the new interim standards as required by the Energy Conservation Standards for New Buildings Act. A mechanism for exchanging experiences and information among IEA member nations on effective retrofit measures in public buildings will be developed.

RESIDENTIAL CONSERVATION SERVICE	FY 1985	FY 1986	FY 1987 Congressional Request
	$1,274,000	$ 372,000	-0-

The FY 1987 budget request provides no funding for Residential and Commercial Conservation (RCC) which includes the Residential Conservation Service (RCS) and the Commercial and Apartment Conservation Service (CACS). This funding level represents a $372,000 decrease from FY 1986.

In FY 1986, implementation of CACS will continue, and the CACS Federal standby programwill be initiated. The funds will be used to support technical review of CACS state plan amendments and CACS Federal standby procedures proposed by utilities in Federal standby states, to provide limited technical assistance to those states and utilities and to monitor and evaluate the CACS and CACS standby programs.

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There will be little DOE activity in FY 1986 related to RCS. The requirement that utilities disseminate RCS program announcements terminated January 1, 1985, and it is assumed that many utilities phased down their RCS programs over the course of 1985. An updated evaluation report will be issued and results shared with States, utilities, and other interested parties. Monitoring of utility supply installations and financing activities will continue.

Consistent with the shift away from a Federal regulatory role, activities were initiated in FY 1985 to encourage voluntary utility energy efficiency programs which are more cost effective than RCS and better suited to utility needs. These activities will continue in FY 1986 on a limited basis.

In FY 1987 Federal support for RCS and CACS will be terminated. Limited staff assistance will be provided to utilities and related groups to encourage voluntary energy efficiency programs using non-Federal funds.

Program Direction.....$2,400,000

The FY 1987 budget request for Program Direction is $2,400,000. This represents a reduction of $1,157,000 compared to the FY 1986 appropriation. The requested funding will provide salaries, benefits and travel for a staff of 45 FTE's to manage the Buildings and Community Systems program.

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
KEY ACTIVITY SUMMARY

BUILDINGS AND COMMUNITY SYSTEMS

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
BUILDING SYSTEMS **Building Materials** Objective: To characterize the basic physical, chemical, and mechanical properties of insulation and other building materials which influence their effectiveness, durability, safety, and health impacts when used for energy conservation.	Continued research to quantify basic properties of insulation materials, including loose-fills. Continued urethane foamed board insulation aging study. Initiated assessments of masonry block products and low-density concretes. Determined feasibility of developing test procedures for corrosiveness, and for smoldering combustion of insulations. Continued modeling of reflective foil insulation systems. Initiated investigations of moisture impacts on a selected set of building materials. Determined operating range of 1-meter guarded hot plate (GHP); completed construction of high temperature	Terminate basic properties studies of insulation materials; complete loose-fill studies. Complete aging study of foamed board insulation. Complete assessment of masonry block products and low-density concretes; test low-density concretes. Extend moisture impacts studies to include other building materials based on ASHRAE recommendations. Terminate tests of candidate improved standard reference materials for 1-meter GHP; verify precision and accuracy of high temperature GHP. Close-out model development with verification through experimental testing using screen test apparatus. ($1,048) ORNL, NBS	No Activity. ($0)

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Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Building Materials (cont'd)	GHP. Developed analytical and simulation models of transient and radiative heat transfer in insulation materials. Continued investigation of advanced insulation concepts including evacuated powders, nonformaldehyde emitting foams, reflective films and composites. ($1,400) ORNL, MBS		
Building Subsystems Objective: To develop protocols for testing walls under static and dynamic conditions; to identify, characterize, and formulate solutions for building features that produce energy losses; and to assess thermal mass effects in buildings.	Wall Research: Completed calibrated hot box protocol developments, conducted tests using protocol, and developed comparisons of hot box tests with results of field test of similar wall sections. Initiated testing and validation of building envelope thermal anomalies (BETA's); completed concrete thermal break evaluation. Initiated study of thermal mass in multi-family residential buildings; completed comparisons of thermal mass modeling results using various computer programs.	Develop procedure for dynamic testing of walls in the calibrated hot box; complete static tests of composite wall sections. Develop techniques to evaluate building envelope thermal anomalies (BETA's); complete study of low-density high-strength concrete to eliminate concrete thermal bridges. Complete construction of thermal bridge laboratory facility; continue study of thermal mass in multi-family buildings; extend study of thermal mass into southern climates; and develop simplified methods for use of thermal mass database in design. Initiate foundations/earth con-	Continue dynamic tests of walls at MBS; develop laboratory test procedures to evaluate dynamic performance of walls; conduct laboratory study and analyses of thermal anomalies; initiate study of building envelope subsystem joints (wall-floor, wall-wall, etc). Initiate development of guideline for mass utilization in multifamily buildings. Continue evaluation of alternative foundation systems. Expand simulation models of wall thermal performance and integrate into existing computer simulations. Evaluate value of superlightweight

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Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Building Subsystems (cont'd)	Completed planning for foundations and earth contact research. ($734)	tact research by evaluating problems associated with crawlspace moisture control. Conduct study of innovative foundation systems including all-wood foundations. Evaluate the value of a foundations test facility. ($1,219) MBS, ORNL	concrete for foundations. Initiate program to evaluate thermal interactions and begin planning for cost-shared foundation test facility. ($600)
Objective: To develop a technology base to permit design and construction of more energy-efficient roof systems that are also durable and cost-effective.	Roof Research: Completed design and started fabrication of the test chamber for the Roof Research Center (RRC). Continued to develop and validate a roof thermal performance simulation model. Continued thermal performance testing of low slope roof specimens using the outdoor Roof Thermal Research Apparatus (RTRA) to collect data on thermal and moisture migration. Continued development of capacitance and maymetic resonance prototype instruments for moisture measurements. ($516)	Continue development of model for predicting thermal and moisture transport behavior of roofs. Continue thermal and moisture transport behavior of roofs. Continue thermal and moisture testing with the RTRA in support of model validation program for moisture measuring instruments. Complete a study of the effect of solar ultraviolet radiation on roof systems. Complete research on effect of solar absorptance on roof thermal performance. Expand thermal performance survey methodology to include in-service roofs. Provide a report on the accuracy of thermographic temperature measurements. Validate in situ heat flow measuring devices. ($495) ORNL	Complete development of roof model which includes moisture and thermal properties, and mechanical stresses. Complete analysis of one-dimensional transient thermal performance of insulated roof systems. Carry out limited three-dimensional thermal analysis of insulated roofs (joints and penetrations). Conduct tests of moisture measuring instruments in the RTRA. ($600)

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Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Building Subsystems (cont'd) Objective: To develop techniques to selectively control heat and light transmitted through fenestration; to develop a technology base for characterizing the net thermal and daylighting effects of window, atria, and skylight systems.	Fenestration Research: Continued research on materials that selectively control heat and light, including glass and plastic substrates, coatings, transparent insulators, fluorescent concentrators, surface microstructures, and gradient index materials. Continued development of experimental and analytical techniques to predict thermal daylighting performance, addressing heat transfer in gaps, solar optical properties, and analytical and scale models. Completed Mobile Window Thermal Test (MoWiTT) facility calibration and first series of systematic fenestration field tests. Continued	Continue reduced scope MoWiTT summer and winter field tests for multiglazed windows and sun control systems. Conduct limited simulation of non-residential daylighting performance. Terminate occupant impact studies; calibrate luminance mapping camera; conduct reduced level research on advanced design tool planning. Test and evaluate alternative Low-E coatings; conduct component U-value test on sealed insulating glass units; and complete shading device validation study. $95 of new BA for optical materials research and development of a residential fenestration builders' guide are proposed for deferral. ($1,333) LBL, MBS	No Activity. ($0)

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Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Building Subsystems (cont'd)	studies of fenestrations impacts on occupants and the building, and revised occupant response to windows and daylighting evaluation profile. ($2,316) LBL, NBS		
	Lighting: No Activity. ($0)	Complete pilot test of the hypotheses which quantify the relationship among lighting comfort, lighting design variables, and lighting energy use; coordinate with lighting industry research activities. ($190)	No Activity. ($0)
Objective: To develop and maintain a data base on radon sources and to characterize mechanisms by which radon enters buildings; to identify energy efficient and cost-effective indoor air pollutant mitigation and control strategies; to develop and	Indoor Air Quality, Infiltration, and Ventilation: Continued research to identify and quantify sources of indoor radon, to assess the variability of ambient radon levels and to characterize radon building entry mechanisms. Continued to develop and evaluate energy efficient and cost effective source control and ventilation strategies to	Continue to identify and quantify sources of indoor radon, to assess the variability of ambient radon levels, and to characterize radon building entry mechanisms. Continue to develop and evaluate energy efficient and cost effective source control and ventilation strategies to maintain indoor air quality, including radon mitigation. Continue collaborative efforts to develop volun-	Continue to identify and quantify sources of indoor radon, to assess the variability of ambient radon levels, and to characterize radon building entry mechanisms. Continue to develop and evaluate energy efficient and cost effective source control and ventilation strategies to maintain indoor air quality, including radon mitigation. Continue

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Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
validate techniques for measuring ventilation, and interzonal flows in multiple-chamber buildings.	maintain indoor air quality. Continued collaborative efforts to develop voluntary consensus standards for indoor air quality, and interagency efforts to coordinate indoor air quality research. Conducted research on volatile organic emissions from building materials. Initiated collaborative efforts with the private sector to establish an indoor air quality field studies data base. Continued measurement of ventilation performance in large buildings, using both active and passive techniques. Continued development of passive perfluorocarbon technique for measuring multizonal infiltration. Continued testing and evaluation of the AC pressurization technique for determining air leakage. Initiated research to develop and evaluate active techniques for measuring	tary consensus standards for indoor air quality, and interagency efforts to coordinate indoor air quality research. Conduct research on volatile organic measurement and control techniques. Continue collaborative efforts with the private sector to maintain an indoor air quality field studies data base. Initiate interagency efforts to develop an indoor air quality model. Continue measurement of ventilation performance in large buildings, initiating efforts to measure indoor pollutants and ventilation efficiency. Complete testing and evaluation of the AC pressurization technique for determining air leakage. Continue research to develop and evaluate active techniques for measuring multizonal air leakage and air infiltration. Continue development of a simplified multizonal infiltration and ventilation model. Initiate scale model research of forced	collaborative efforts to develop voluntary consensus standards for indoor air quality, and interagency efforts to coordinate indoor air quality research. Complete research on volatile organic measurement and control techniques. Continue collaborative efforts with the private sector to maintain an indoor air quality field studies data base. Continue interagency efforts to develop an indoor air quality model. Continue measurement of ventilation performance in large buildings, including measurements of indoor pollutants and ventilation efficiency. Complete development of passive perfluorocarbon technique for measuring multizonal infiltration in large buildings. Test and evaluate active techniques for measuring multizonal air leakage and air infiltration. Complete development of a simplified multizonal infiltration and ventilation model. Continue scale model research

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Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Building Subsystems (cont'd)	multizonal air leakage and air infiltration. Initiated development of a simplified multizonal infiltration and ventilation model. ($1,855) LBL, NBS, BNL, ORNL	convection flows in enclosures. ($1,900 including $140 of prior year funds) LBL, NBS, BNL, SERI, ORNL	of forced convection flows in enclosures, introducing both point and area pollutant sources. ($1,900) LBL, NBS, BNL, SERI, ORNL
Building Systems Interactions Objective: To develop the technical basis for characterizing the complex interactions of building materials, components, and subsystems in a complete building and the impacts of these interactions on the overall building thermal performance characteristics.	Commercial: Completed research on energy-conserving building systems interactions in multifamily midrise and highrise buildings. Published energy-conserving design handbook for multifamily building designers, owners, and developers. Continued development of energy performance targets in industry, analyzed options for technical development of targets, and completed project plan indicating the required research steps. Initiated planning effort for research in the integration of advanced systems concept including the use of structural mass in commercial buildings and the integra-	Terminate commercial building systems interaction research. Complete survey of systems interactions in retail facilities based on prototypical buildings defined in a cooperative effort with industry. Complete base case building descriptions to be used in technical analysis. Derive, for review, initial target for first set of building-load types. Publish agenda for long-term systems integration of advanced subsystems and design process research for consideration by private industry. ($952) PNL	No Activity. ($0)

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Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Building Systems Interactions (cont'd)	tion of mass with mechanical systems. Initiated design process research using expert systems technology. Compiled and reviewed existing design process research results to determine the best format for a computerized general building energy design tool for architects and engineers. Continued collection of baseline data and post-occupancy evaluation of commercial building lighting quality. ($1,327) PNL		
	Residential: Continued residential building systems interaction research. Reviewed public comment on site-built slide rule and guidelines, completed thermal mass slide rule tab research, and finalized site built slide rule. Collected absorption/desorption performance data for buildings in hot humid climates for use in advanced simulation pro-	Terminate residential building systems interaction research. Publish Notice of Inquiry and review public comment on thermal mass addition to finalized slide rule and documents. Complete, test, validate, and update PEAR with thermal mass and apartment data. Collect climate data and prepare climate related rules of thumb for designers. Analyze hot-arid data to ascertain primary	No Activity. ($0)

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Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Building Systems Interactions (cont'd)	gram to predict the energy impacts of natural ventilation. Continued development of micro-computer program for site-built residential buildings. Evaluated interactions of energy features in different climates using Program for Energy Analysis of Residences (PEAR) and developed micro-climate methodology. Continued development of technical basis for improved efficiency of buildings in hot-arid residential research. Analyzed load and energy use patterns of low rise, multifamily, residential buildings to establish primary determinants of energy use. Provided technical support for residential research planning and oversight. ($1,123) LBL, BNL, FSEC	determinants of residential building energy use, validate finite element model. Analyze interactions of building design parameters. ($953)	
Objective: To ensure availability of a public domain building energy simula-	Performance Calculations: Continued maintenance of DOE-2 building energy performance computer code.	Phase out all activity. Phase out maintenance of DOE-2 building energy performance computer code. Phase out DOE-2	No Activity. ($0)

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Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
tion program for use by researchers, designers, architects and engineers.	Updated DOE-2 documentation and user manuals. Developed, tested, and validated new capabilities for DOE-2, including new mechanical equipment types. Completed conceptual development of an advanced building energy performance simulation program. Initiated collaborative efforts to develop a unified methodology for writing building energy simulation program modules. ($1,225) LBL	documentation and user manuals efforts. Phase out development, testing, and validation of new capabilities for DOE-2. ($761) LBL, SERI, NBS	
Objective: To advance the technical understanding of the dynamic interactions among building envelopes, energy-consuming building equipment, and the building control systems.	Control Systems: Completed research to develop, verify, and refine additional optimization algorithms and heating, ventilation and air-conditioning components models. Completed series of reports analyzing controls strategies used in buildings, algorithms for air handlers, three optimization strategies, and an interactive front end model for a building/HVAC/control system simulation program. (unexpended balances) NBS	Terminate all activity; specifically, terminate development of evaluating the dynamic interactions among building envelope, space conditioning and other energy-using systems and building energy control systems. ($95) NBS	No Activity. ($0)

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Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Building Systems Interactions (cont'd)	Research Utilization: Conducted institutes for architectural and engineering schools. Conducted architectural students "Buildings Plus Energy" national design competition. ($295)	Funds requested in Analysis and Technology Transfer subprogram. ($0)	No Activity. ($0)
Building Energy Retrofit Research Objective: To increase the effectiveness and predictability of retrofit measures applied to single-family homes and multifamily and commercial buildings.	Single Family Buildings: Completed detailed plans for a national research program directed at existing single family buildings, in cooperation with trade and professional organizations, utilities and other interested organizations. Completed design of a standard protocol for collecting and analyzing field data on the impact of retrofit measures. Tested and evaluated equipment retrofit measures and programs for low-income homes. ($1,200) ORNL, SERI	Validate the monitoring protocol through limited field tests, obtain consensus among private and public organizations on its application and conduct cooperative field monitoring efforts. Using field monitoring and other techniques, conduct research to determine the reasons for variations between predicted and actual energy savings of key retrofit measures and the impacts of building retrofit in hot and humid climates. Complete test and evaluations of equipment retrofit measures and programs. Terminate single family building energy retrofit research. ($800) ORNL, SERI	No Activity. ($0)

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Building Energy Retrofit Research (cont'd)	Multifamily Buildings: Completed detailed plans for a national research program directed at existing multifamily buildings, in cooperation with trade and professional organizations, other Federal agencies, utilities, states and other interested organizations. Completed design of a standard protocol for collecting and analyzing field data on the impact of retrofit measures. Initiated monitoring of public housing projects to determine energy use patterns and the effectiveness of retrofit and control strategies. Initiated analysis of air flow and infiltration in large multifamily buildings and reviewed audit and retrofit measures for multifamily buildings with hydronic systems. ($900) LBL, Princeton	Validate the monitoring protocol through limited field tests, obtain consensus among private and public organizations on its application. Conduct monitoring of public housing projects and review of retrofit measures for hydronic systems. Using field monitoring and other techniques, assess accuracy of existing audit methods for multifamily housing, determine end-uses (e.g., heating, hot water) with largest potential energy savings, and conduct research to study the impacts of occupant behavior on retrofit energy savings. Develop standard diagnostic procedures for determining air infiltration in multifamily buildings. Terminate multifamily building retrofit research. ($735) LBL, Princeton	No Activity. ($0)

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Building Energy Retrofit Research (cont'd)	Commercial Buildings: Completed detailed plans for a national research program directed at existing commercial buildings in cooperation with a panel of experts including representatives of trade and professional organizations. Initiated data gathering and analysis of end-uses and building types with the greatest potential for energy savings. Initiated review of existing data on retrofit energy savings. ($68b) ORNL, PNL, SERI	Complete data gathering and analysis of building types and end-uses. Develop a standard protocol for collecting and analyzing field data on the impact of retrofit measures in small commercial buildings. Conduct research to validate the monitoring protocol through limited field tests. Conduct research on management practices and decisionmaking in the commercial sector to determine the types of retrofit strategies that might be most effective. Terminate commercial building retrofit program. ($800) ORNL, PNL, SERI	No Activity. ($0)
Standards and Guidelines Objective: To meet both statutory requirements and the needs of the building industry for energy-efficient building guidelines.	Completed development and prepared NOPR for interim energy performance standards for new commercial buildings and Federal residential and manufactured housing. Initiated development of voluntary interim energy performance standards for new residential and manufactured housing. ($1,078) PNL, LBL	Promulgate interim commercial and Federal residential standards. Complete statutorily required demonstration project of interim Federal residential standards. ($1,143) PNL, LBL	Complete development and prepare NOPR for interim voluntary residential and manufactured housing guidelines. ($400)
Subprogram Totals	$14,655	$12,424	$3,500

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Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
COMMUNITY SYSTEMS District Heating and Cooling Objective: To increase the energy efficiency and reduce cost of district heating and cooling through the application of advanced technologies and novel systems development concept.	Systems and Components Research: Initiated research in district cooling energy delivery enhancement. Studied additives which can increase fluid flow in district cooling systems. Identified the desired characteristics of the additive and commercially available products with these characteristics. Initiated research in methods to retrofit old systems using Scranton, PA, system as a laboratory. Conducted baseline studies and identified proven DHC technologies that might be applicable to renovation of the Scranton system. Initiated analysis of DHC distribution systems as initial effort in reducing material and installation	Continue research on distribution fluid additives for drag reduction ("slippery water") to improve fluid flow and begin assessment and testing of phase change slurries ("liquid ice") to enhance the energy carrying capability of fluids for district cooling. With $290 prior year funds, continue research in methods to retrofit old systems using Scranton system as a laboratory. Assess performance of DHC distribution components, systems, and concepts for relative cost effectiveness. Complete methods	No Activity. ($0)

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Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
District Heating and Cooling (cont'd)	costs. Began data base compilation in support of industry development of performance standards for thermal metering. Completed inventory of small solid fuel combustors available commercially. Identified research needs and provided to Office of Fossil Energy for consideration. Developed method for analyzing the feasibility of ten DHC systems types in prototype communities. Continued dissemination of DHC research results and information exchange. Continued IEA co-operative research and development in the field of district heating with nine foreign countries. ($1,887) Community Central Energy Corporation of Scranton, ANL	for analyzing underground distribution systems performance and conduct research on acoustic leak detection. Complete "elbow out-of-plane" meters installation analysis in support of industry standards development for thermal metering. Conduct cost-shared research in advanced DHC systems and components. Activities funding includes $563 prior year funds. Test method for analyzing the feasibility of ten DHC systems types in one community. Continue dissemination of DHC research results and information exchange. Continue IEA cooperative research and development projects. Terminate all district heating and cooling systems and components research. ($1,906 including $853 prior year funds) ANL	

BUILDINGS AND COMMUNITY SYSTEMS

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Objective: To assist cities and towns in their initial efforts to assess the technical and economic potential of utilizing district heating and cooling technology in their communities.	Feasibility Studies: Selected 15 communities to cost-share feasibility assessment studies for developing DHC systems in their localities. Provided technical support to communities to assure identification of special circumstances or characteristics unique to their localities. ($700)	Select 11 cities to cost share feasibility assessment studies for developing DHC systems in their localities. Provide technical support to participating communities. Phase out community district heating and cooling feasibility studies. ($657)	No Activity. ($0)
Community Energy Systems Integration. (Formerly Community Energy Planning Development and Management) Objective: To improve the efficiency of energy use in local government facilities and services and to	Urban Consortium: Conducted Energy Task Force Projects in 19 local jurisdictions including applied research to improve the mix and efficiency of energy use in local government operations, community energy management, alternative and innovative energy technologies and public/private financing techniques for energy projects. ($1,900)	$1903 of new BA to conduct approximately 18 applied research projects in local government jurisdictions are proposed for deferral. ($0)	No Activity. ($0)

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Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
community and neighborhood use and development practices.	Site Design: Continued research to develop information and model for predicting energy savings that result from design strategies that modify the site climate of clusters of buildings. ($170) AHL	Using new BA and $30 prior year funds, complete model development and begin field testing of selected design strategies in a variety of climatic regions. Terminate energy efficiency site design research. ($230) AHL	No Activity. ($0)
Subprogram Totals	$4,717	$2,793	$0
TECHNOLOGY AND CONSUMER PRODUCTS Thermally Activated Heat Pumps Objective: To advance generic technologies for fuel-fired heat pumps with a potential heating coefficient of performance of 1.6 to 2.0 and higher.	Continued research on high efficiency advanced cycle absorption heat pumps for residential and commercial application. Began proof-of-concept tests on residential system. Continued evaluation of first generation hydraulic compressor/transmission concept and initiated evaluation of concepts for free piston Stirling engine driven heat pumps for residential	Continue proof-of-concept tests and evaluation of advanced cycle absorption heat pumps for residential and commercial application. Begin proof-of-concept tests on commercial systems. Initiate solution pump development for residential absorption systems. Complete research on first generation low loss hydraulic transmission/compressor for free piston Stirling engine heat pump.	Continue test and evaluation of advanced cycle absorption heat pumps for residential and commercial application. Continue research and development of residential advanced cycle absorption heat pump using ternary fluids, and continue solution pumps development. Develop advanced transmission/compressor concepts for free piston Stirling engine driven

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Thermally Activated Heat Pumps (cont'd)	application. Continued supporting research efforts on engine/compressor matching using a unique hydraulic dynamometer, and continued model development for free piston Stirling engine driven heat pumps. Continued development of a free piston internal combustion (IC) engine heat pump for commercial application and initiated research and development of bellows concepts for engine/compressor refrigerant sealing. ($4,443) ORNL	Initiate preliminary evaluation of alternate concepts. Continue supporting research in engine/compressor matching analysis, engine dynamics, and modeling for free piston Stirling engine heat pumps. Continue evaluation of free piston internal combustion engine heat pump for commercial building applications, including bellows seal concept development and evaluate applicability to residential application. Begin planning for cofunded testing of I.C. engine driven heat pump under field conditions. $108 of prior year funds are proposed for deferral which will reduce the general level of heat pump activities. $476 of new BA for research on the use of ternary fluids in a residential absorption heat pump are proposed for deferral. ($4,000)	heat pumps. Continue supporting research in Stirling engine/compressor thermodynamics, and modeling. Continue evaluation and testing of an I.C. engine driven heat pump under field and laboratory conditions. ($4,000) ORNL
Advanced Refrigeration Systems Objective: To develop basic data on advanced technologies for heat pumps, refrigeration equipment, HVAC systems, and appliances.	Continued preliminary characterization of heat pump components using non-azeotropic refrigerant mixtures. Completed preliminary analysis of capacity modulation benefits. Continued test and evaluation of ground coupled heat exchangers and completed analysis and	Expand research effort in nonazeotropic refrigerant mixture characterization to include separation techniques, composition control, and component characterization. Expand laboratory testing of advanced systems concepts in capacity modulation. Develop analytical methods and evaluate modulation options. Complete	

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Advanced Refrigeration Systems (cont'd)	modeling of soil heat transfer phenomena. Completed testing on heat pump dynamic loss mechanisms and transferred technology to private sector. Continued evaluation of novel concepts for alternative refrigeration techniques. Completed research on fine particle advanced insulation for appliances and examined potential of evacuated insulation panels. Continued characterization of commercial building HVAC R&D opportunities. ($2,400) ORNL	ground coupled heat exchanger testing and model development and transfer technology to private sector. Complete testing of optimized ground coupled heat pump system. Continue assessment of novel concepts for alternative refrigeration cycles including assessment of ejector heat pump cycles and dessicant systems. Complete evaluation of micro-fine particle materials and evacuated insulation panels and transfer technology to private sector. Initiate scoping studies of concepts for advanced commercial building HVAC systems. Terminate advanced refrigeration system. ($2,167) ORNL	
Combustion Systems Research Objective: To develop generic technologies to improve the efficiency of oil and gas heating	Completed characterization of heat exchanger corrosion from natural gas combustion including chloride impact and spatial variation of corrosion. Assessed particulate formation in conventional oil-fired burners. Initiated development of	Investigate corrosion mitigation techniques by assessing novel combustion approaches and design methodologies for metallic and nonmetallic condensing heat exchangers. Conduct assessment of advanced technology oil combustion systems. Develop and evaluate breadboard instruments	No Activity. ($0)

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
to 90-95% and to improve the safety and efficiency of wood and coal combustion systems for the residential and commercial sectors.	diagnostic method for field measurement of seasonal performance of gas space heating systems. Identified combustion products from wood within the combustion zone and began to characterize downstream chemical reactions. ($797) BNL, MBS	for assessing field performance of wood heating systems and transfer technology to private sector. Complete analysis of combustion reactions and develop a chemical model for wood combustion. Terminate combustion systems research. ($667) BNL, MBS	
Lighting Equipment Research Objective: To evaluate advanced concepts for high efficiency light sources (lamps) and to develop basic data on lighting systems performance in buildings.	Continued research in lamp plasma discharge phenomena, including Zeeman effect, and mercury isotope enrichment and separation. Investigated the feasibility of an electrodeless gigahertz fluorescent lamp and built lab prototype. Continued investigation of electrodeless high intensity discharge (HID) fills. Developed advanced diagnostic techniques to characterize lamp plasma. Characterized energy interactions of lighting system components in designed building spaces. ($1,004) LBL	Identify lamp characteristics for magnetically loaded (Zeeman effect) mercury isotope enriched lamp. Continue research on electrodeless fluorescent gigahertz lamp system. Develop driving techniques for the electrodeless high intensity discharge (HID) lamp with novel gas fills. Conduct diagnostic experiments to characterize the lamp discharge phenomena. Continue experimental investigation of interactive effects of light-system components. $856 of new BA to initiate cost-shared research and development of mercury isotope separation processes, including continued development of a photochemical process are proposed for deferral. ($1,162) LBL	Investigate techniques for applying magnetic field in magnetically loaded lamp. Conduct research to identify optimum configuration for gigahertz lamp and initiate lamp driving concepts for system operation. Build prototype electrodeless high intensity discharge (HID) lamp and develop lamp driving sources. Continue lamp diagnostic experiments to characterize lamp discharge phenomena. Initiate development of advanced interactive lighting designs. ($1,080) LBL

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Equipment Integration Objective: To develop basic data and evaluate advanced concepts for thermal distribution systems, equipment interactions, and the impact of advanced equipment on building occupants and the environment.	Identified impacts of lighting on human responses including Visual Display Terminal (VDT) operators. Initiated research in the interaction of lighting and heating, ventilating and air conditioning (HVAC) systems. Assessed technology status for thermal energy distribution using forced-air, hydronic and radiant systems. Investigated dynamic interactions in forced-air systems in residential buildings. ($1,296) LBL, BNL	Continue to quantify identified human response effects of light source stimuli and fatigue effects of lighting on VDT operators. Analyze visual performance models related to lighting and productivity. Continue research on lighting/HVAC interactions. Investigate thermal loss mechanisms in forced-air distribution systems and evaluate the potential for diagnostic techniques. Terminate equipment integration research. ($957) LBL, BNL	No Activity. ($0)
Subprogram Totals	$9,940	$8,953	$1,000
ANALYSIS AND TECHNOLOGY TRANSFER Technical Assessment and Analysis Objective: To conduct the analyses and assessments necessary to support	IEA Support: Continued assistance to support IEA implementing agreements, transferred results to private sector, and arranged U.S. private sector participation in IEA activities. ($200)	Continue to provide assistance to support IEA implementing agreements, transfer results to U.S. private sector, and arrange private sector participation in IEA activities. ($100)	Continue support for IEA implementing agreements. Continue studies of building conservation technologies used in developed countries and assess impact on international trade and U.S. technology leadership. ($100)

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Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
program planning.	Analysis: Continued to obtain data on energy use and effectiveness of new technologies. Improved and maintained analytical tools and conducted analysis of current and proposed BCS programs. Established a Building Energy Accounting Systems (BEAS). ($529) PNL, BNL	Continue to obtain data on energy use and effectiveness of new technologies; to maintain Building Energy Accounting Systems (BEAS), improve and maintain analytical tools, and conduct analysis of current and proposed BCS programs. Prior year funds of $161 are being used to support multiyear program planning, annual report, and summary of analysis. ($745 including $161 prior year funds) PNL, BNL	Continue development of Building Energy Accounting System (BEAS), publish data book and annual analysis of current and proposed BCS programs. Improve and maintain analytical tools. Conduct special statistical analysis of the EIA residential survey data. ($500)
	Utility Applications Research: No activity. ($0)	Initiate and complete research to determine the impact of building conservation technologies on utility loads, revenues and rates. ($951) LBL	No Activity. ($0)
Technology Transfer Objective: To ensure that research	Rural Housing Amendments (RHA) Act Study: Planned study required by RHA Act of 1983. Prepared detailed work plan. Characterized,	Initiate and complete RHA study comparing construction costs, energy use, and value of energy saved in homes built to national manufactured	No activity. ($0)

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
results and information on building energy conservation are transferred to the private sector.	as required by statute, Department of Agriculture and Department of Housing and Urban Development (HUD) residential and manufactured housing standards. (Carried out by in-house staff.)	housing safety standards with homes eligible for loans or insurance under HUD's Title I and Title II programs and FmHA's Title V program. ($333) PNL	
Objective: To develop and deliver nonduplicative, least-cost utility analytical tools data for utility industry use to determine impacts of energy conservation on demand-side planning.	Research Utilization: Funded under the Building Systems subprogram in FY 1985.	Continue the Institutes for Architectural and Engineering Faculties and the Architectural Student Design Competition. Continue development of design tools, techniques and specific informational packages for architects, engineers, builders, owners, manufacturers, and professional school faculties. Terminate research utilization activities. ($450)	No Activity. ($0)
	Technology Transfer: Continued to monitor research results and disseminate to States, communities, other agencies, utilities, and the private sector. Worked with	Continue to monitor research results and disseminate to States, communities, other agencies, utilities, and the private sector; and to work with associations and other	Improve technology transfer system to monitor research progress and ensure that research results are transferred quickly, efficiently and effectively to the pri-

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Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Technology Transfer (cont'd)	associations and other organizations to sponsor workshops, conferences, symposiums, and committees to effectively and quickly transfer BCS research results. ($200) ORNL, PNL	organizations to sponsor workshops, conferences, symposiums, and committees to effectively and quickly transfer BCS research results. ($200) ORNL, SERI, PNL	vate sector. Continue to work with other organizations and associations to sponsor workshops, symposiums, conferences, and committees to quickly and effectively transfer BCS research results. Continue the preparation and publication of state-of-the-art reports on all aspects of efficient use of energy in buildings, building equipment, and community systems. ($400) ORNL, SERI, PNL
Subprogram Totals	$ 929	$2,779	$1,000
APPLIANCE STANDARDS Test Procedures and Consumer Education Objective: To develop standardized test methods for determining energy efficiency, energy use, and estimated annual operating costs of a product covered by applicable legislation.	Continued to develop, maintain, simplify and improve test procedures for appliances in support of the FTC labeling program, and to process manufacturer requests for modification of appliance test procedures. ($900) NBS	Continue to develop, maintain, simplify and improve test procedures for appliances in support of the FTC labeling program; and to process manufacturer requests for modification of test procedures. Terminate test procedures and consumer education activities. ($833) NBS	No Activity. (Repeal of this program is being sought by the Department.) ($0)

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Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Appliance Standards Development Objective: To increase the appliance efficiency through the establishment of minimum energy efficiency performance standards where economically warranted.	Continued to process manufacturer requests for supersession of State standards and to perform research on impacts of appliance standards. ($1,449) LBL	Continue to perform research on impacts of appliance standards (including energy use analysis); and to process manufacturer request for supersession of State standards. $99 of prior year funds for application to engineering analysis in support of standards rulemaking are proposed for deferral. ($1,073) LBL	Continue to perform research on impacts of appliance standards (including energy use analysis); and to process manufacturer request for supersession of State standards. ($1,200)
Subprogram Totals	$2,349	$1,906	$1,200
FEDERAL ENERGY MANAGEMENT PROGRAM Federal Planning, Reporting and Evaluation Objective: To coordinate Federal agencies planning for meeting mandated energy conservation goals; to evaluate program progress and report to the President and Congress.	Continued to prepare annual reports to the President and to Congress on the status of the Federal agencies' progress in meeting the mandated goals of EPCA, NECPA and E.O. 12003. Monitored agencies' energy usage and evaluated their progress in meeting mandated goals. Analyzed agency energy consumption data and developed trend line data for use by top	Continue to prepare annual reports to the President and to Congress on the status of Federal agencies' progress in meeting the mandated goals of EPCA, NECPA, and E.O. 12003. Monitor agencies' energy usage and evaluate their progress in meeting mandated goals. Analyze agency energy consumption data and develop trend line data for use by top management. Review energy programs and projects at operational sites. Prepare	Continue to prepare annual reports to the President and to Congress on the status of the Federal agencies' progress in meeting the mandated goals of EPCA, NECPA and E.O. 12003; monitor agencies' energy consumption data; and develop trend line data for use by top management. Review energy programs and evaluate effectiveness of shared-savings contracts. Evaluate data developed from pilot shared-

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Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Federal Planning, Reporting and Evaluation (cont'd)	management. Increased amount of energy information to incorporate more material from State and local governments. Continued to coordinate agencies' activities through meetings of energy coordinators and periodic meetings of the "656" Committee. Administered the Federal Energy Efficiency Awards program and coordinated Federal agencies' participation in Energy Awareness Week. ($500)	plans to broaden the data base of the shared-savings information center as Federal agencies put shared-savings contracts in place. Continue to coordinate agencies' activities through meetings of energy coordinators and periodic meetings of the "656" Committee. Administer the Federal Energy Efficiency Awards program and coordinate Federal agencies' participation in Energy Awareness Week. ($264)	savings projects to determine effectiveness. Review and update the FEMP energy information system to include process energy. Continue to coordinate agencies' activities through meetings of energy coordinators and periodic meetings of the "656" Committee. Administer the Federal Energy Efficiency Awards program and coordinate Federal agencies' participation in Energy Awareness Week. ($360)
Program Technical Guidance and Assistance Objective: To provide technical guidance to assist Federal agencies in carrying out their energy conservation programs.	Continued to update the life cycle cost (LCC) factors, reviewed and revised the LCC manual and the private sector report on LCC. Provided assistance to agencies in implementing shared-savings projects. Continued workshop program for life cycle cost and "Energy in Design."	Continue to update the life cycle cost (LCC) factors, and provide changes to the manual. Provide Federal agencies computer program software for conducting LCC and analyses of retrofit project. Continue assistance to agencies in implementing shared-savings projects and validate data developed on shared-savings projects. Hold special train-	Continue to update the life cycle cost (LCC) factors and provide changes to the manual. Continue assistance to Federal agencies in implementing shared-savings projects. Continue workshops for LCC analyses, "Energy in Design," employee awareness, and mandatory building standards, and hold special

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Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Program Technical Guidance and Assistance (cont'd)	Analyzed the general advantages and disadvantages to the Federal Government of relying upon its own resources versus using energy service contracting, considering the Deficit Reduction Act of 1984, multi-year contracting restrictions, termination liabilities and other issues. Examined feasibility of having contractors operating DOE laboratories utilize shared-savings contracts. Initiated revision and updating of the "Architects and Engineers Guide to Energy Conservation in Existing Buildings." Prepared case studies of successful retrofit projects. ($785)	ing sessions for Federal procurement officials and legal advisors on shared savings contracting. Continue workshop on LCC analyses, "Energy in Design" and employee awareness. Hold workshops for implementing the mandatory energy conservation standards for new buildings. Develop and test an employee awareness program. Complete and distribute the "Manual for Retrofit of Existing Buildings." ($950)	training sessions for Federal procurement officials and legal advisors on shared-savings contracting. Initiate information exchange with energy management departments of IEA-member governments. ($690)
Subprogram Totals	$1,285	$1,214	$1,050

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Department of Energy
FY 1987 CONGRESSIONAL BUDGET REQUEST
($ in 000's)
Buildings and Community Systems
Key Activity Summary

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Residential & Commercial Conservation	Continued to review RCS plan amendments, and to analyze and respond to technical inquires from states and utilities. Reviewed and approved utility RCS Federal standby programs. Monitored utility supply, installation and financing programs under RCS. Initiated update of 1984 PCS evaluation report. Reviewed CACS plans, and issued Federal standby Plan regulation. Initiated limited work with utilities to encourage voluntary energy efficiency programs. ($1,274)	Complete evaluation of RCS program and share results with States, utilities, and with other interested parties. Monitor utility supply, installation, and financing programs. Continue to review CACS plans and amendments, and implement CACS Federal standby program. Respond to technical inquires and provide policy and program guidance to CACS standby utilities. Continue limited work with utilities to encourage voluntary energy efficiency programs. ($372)	Terminate RCS & CACS programs. Continue limited staff assistance to utilities and related groups to encourage voluntary energy efficiency programs using non-Federal funds. (-0-)

BUILDINGS AND COMMUNITY SYSTEMS

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
CAPITAL EQUIPMENT	Initiated establishment of Roof Research Center at ORNL. Replaced outmoded equipment and acquired needed additional equipment at the national laboratories. ($1,245)	Acquire diagnostic, computer data logging, and laboratory test equipment to support indoor air quality, advanced lighting, heat pump, district heating and cooling, FEMP, and building systems programs. ($1,951 including $45 prior year funds)	No Activity. ($0)
Subprogram Totals	$1,245	$1,906	$0
PROGRAM DIRECTION	Continued staffing at the level of 71 FTE's. Provided salaries, benefits, and travel to manage BCS programs. ($2,820)	Continue staffing to the level 71 FTE's. Provide salaries, benefits, travel, and contractor support to manage BCS programs. $170 of new BA and $380 of prior year funding are proposed for deferral. ($3,469)	Reduce staffing to the level of 45 FTE's. Provide salaries, benefits and travel to manage BCS programs. ($2,400)
Subprogram Totals	$2,820	$3,469	$2,400
PROGRAM TOTALS	$43,007*	$36,114	$14,150

*Includes $1,000 for Urban Waste, $1,080 for RCS, and -$13 for Small Business
**Includes $625 for RCS

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DEPARTMENT OF ENERGY

FY 1987 CONGRESSIONAL BUDGET REQUEST
LEAD TABLE
ENERGY CONSERVATION
INDUSTRIAL ENERGY CONSERVATION

(Tabular dollars in thousands. Narrative material in whole dollars.)

Departmental Request	FY 1985 Approp.	FY 1986 Approp.	FY 1987 Base	FY 1987 Request	Request vs. Base
Waste Energy Reduction					
Operating Expenses	$11,859	$11,174	$11,174	$ 6,300	-$ 4,874
Capital Equipment	-0-	-0-	-0-	-0-	-0-
Subtotal	$11,859	$11,174	$11,174	$ 6,300	-$ 4,874
Industrial Process Efficiency					
Operating Expenses	$ 9,556	$19,551	$19,551	$ 5,479	-$14,072
Capital Equipment	1,156	-0-	-0-	-0-	-0-
Subtotal	$10,712	$19,551	$19,551	$ 5,479	-$14,072
Industrial Cogeneration					
Operating Expenses	$ 4,116	$ 4,377	$ 4,377	$ 1,500	-$ 2,877
Capital Equipment	1,000	-0-	-0-	-0-	-0-
Subtotal	$ 5,116	$ 4,377	$ 4,377	$ 1,500	-$ 2,877
Implementation & Deployment					
Operating Expenses	$ 2,212	$ 2,978	$ 2,978	$ 500	-$ 2,478
Capital Equipment	-0-	-0-	-0-	-0-	-0-
Subtotal	$ 2,212	$ 2,978	$ 2,978	$ 500	-$ 2,478
Program Direction					
Operating Expenses	$ 1,807	$ 2,016	$ 2,016	$ 1,844	-$ 172
Subtotal	$ 1,807	$ 2,016	$ 2,016	$ 1,844	-$ 172
Total					
Operating Expenses	$29,550	$40,096	$40,096	$15,623	-$24,473
Capital Equipment	2,156	-0-	-0-	-0-	-0-
Total - Industrial Energy Conservation	$31,706	$40,096	$40,096	$15,623	-$24,473
Staffing Total FTE's	33	35	35	26	-9

AUTHORIZATION: P.L. 93-572, "Federal Non-Nuclear Energy Research and Development Act of 1974"
P.L. 95-619, "National Energy Conservation Policy Act"
P.L. 94-163, "Energy Policy and Conservation Act"
P.L. 93-438, "Energy Reorganization Act"
P.L. 95-91, "Department of Energy Reorganization Act"

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Department of Energy

FY 1987 Congressional Budget Request

Adjustments to FY 1986 Appropriations

	FY 1986 Conference	General Reduction	Management Initiatives	Pay Cost Restoration	Gramm-Rudman Hollings Reduction	Adj. Approp. Total
Industrial Energy Conservation						
Waste Energy Reduction	$ 12,006	$ -72	$ -258	$ ---	$ -502	$11,174
Industrial Process Effic.	21,000	-119	-452	---	-878	19,551
Industrial Cogeneration	4,700	-25	-101	---	-197	4,377
Implementation & Deployment	3,200	-19	-69	---	-134	2,978
Program Direction	1,927	-12	-47	238	-90	2,016
Subtotal, Industrial Energy Conservation	42,833	-247	$ -927	$ 238	$-1,801	$40,096
General Reduction: Operating Expenses.....	-247	+247	---	---	---	---
Management Initiatives: Operating Expenses.....	-927	---	+927	---	---	---
Pay Restoration	+238	---	---	-238	---	---
Total, Industrial Energy Conservation	$41,897	$ ---	$ ---	$ ---	$-1,801	$40,096
Operating Expenses	41,897	---	---	---	-1,801	40,096

DEPARTMENT OF ENERGY

FY 1987 CONGRESSIONAL BUDGET REQUEST
SUMMARY OF CHANGES
INDUSTRIAL ENERGY CONSERVATION
(In Thousands of Dollars)

President's FY 1986 Appropriation	$40,096
Waste Energy Reduction	
- Decreased Effort on Improved Combustion Efficiency	- 259
- Reduced High Temperature Recuperators R&D	- 1,730
- Reduced Industrial Heat Pumps R&D	- 1,298
- Increased Effort on CO_2 Utilization	+ 345
- Decreased Effort on Waste Utilization	- 778
- Decreased Program Support	- 1,154
Industrial Process Efficiency	
- Decreased Thin Strip Casting Research	-12,486
- Decreased Electrode Materials R&D	- 933
- Decreased Coatings Research	- 187
- Decreased Sensors & Controls R&D	- 466
Industrial Cogeneration	
- Decreased Effort for Externally Fired Brayton	- 2,175
- Decreased Effort on Direct Conversion R&D	- 362
- Decreased Effort on Bottoming Cycles Conversion	- 182
- Decreased Activity on Coal-Slurry Diesel	- 158
Implementation and Deployment	
- Decreased Funds for Technology Transfer	- 814
- Decreased Funds for Energy Audit & Diagnostic Centers	- 1,386
- Decreased Funds for Industrial Reporting	- 278
Program Direction	- 172
FY 1987 Departmental Request	$15,623

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Program Objectives and Strategy:

The goal of the industrial energy conservation program seeks to increase energy use efficiency and improve industry's ability to utilize the most cost-effective fuels, via a program of carefully targeted technology research and development activities. The program is focused on high risk development which is in the national interest and for which private industry has insufficient incentive to pursue independently. Most of the activities are conducted by private institutions operating under cost-shared contracts or cooperative agreements with the Department. The industrial energy conservation program is aimed at providing: cost-effective technology options that are available to industry for reducing energy losses embodied in waste streams, waste materials and inefficient processes; technologies which can provide greater fuel flexibility; and the transfer of the technical information to industry for the rapid deployment of the new technologies.

Examples of research and development activities being pursued include:

- Large scale industrial heat pumps that can economically upgrade waste heat to useful process steam.
- High temperature recuperators that can operate in dirty and corrosive waste streams at temperatures up to 2600°F.
- Development of coal-fired equipment that can be retrofitted into existing gas and oil-fired industrial furnaces and boilers.
- Research and development of cost-effective technologies which will make the conversion and/or retrieval of materials from waste streams practical and attractive to industry.
- Advanced sensors and control systems to enable more precise control of energy-intensive processes.
- Electrode materials development to improve operating efficiency of electrolytic cells.
- Direct casting of thin steel strip to eliminate energy-intensive reheating and rolling operations.
- Research and development of separation systems, including membranes, to economically and efficiently replace energy inefficient separation processes.
- Effective means of communicating with the industry sector for the rapid transfer of technology research and development.

Accomplishments for FY 1985 and Anticipated Accomplishments for FY 1986:

- Testing of an Air-Fuel ratio control device developed by DOE on a Potomac Electric utility boiler was completed. Funding for the test was provided by EPRI.
- Three high temperature prototype heat exchangers were installed at industrial sites and proof-of-concept testing was started.
- A study on the circulating fluid bed concept for the externally- fired Brayton cogeneration system was completed.
- A series of test runs were completed on a slow speed diesel test engine using three different coal/water slurries. Some runs were continued for a period of 7-8 hours duration.
- Field testing of two sensors started at paper mills for improved on-line control of processes.
- Completed testing of a new gasification process for paper mill black liquor which makes it safer to recover pulping chemicals and improves the overall recovery of energy from the black liquor processing.
- A project to more efficiently remove water during the paper making process was completed and a technology transfer conference on the results was held with industry representatives.
- Two contracts were commenced to develop the technology for thin strip casting of steel.
- Field testing will be completed on two high temperature prototype heat exchangers.
- A Brayton solvent recovery system prototype will complete its testing at an industrial site.

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- A plating chemicals recovery system will complete its long term testing at an industrial site.
- Large scale testing for the recovery of CO_2 from large boiler exhaust stacks will be started.
- Two large scale prototype slagging combustors will complete testing to show the feasibility of retrofitting industrial oil and gas fired boilers for coal fuel use.
- Topping combustor tests will be completed to show feasibility of use for the externally coal-fired Brayton cogeneration system.
- Proof-of-concept testing of a BiPhase turbine unit will be started for separation of oil and gas at an oil processing station.
- Testing of two sensors at paper mills will be completed.
- Laboratory testing of a 120 watt prototype sodium heat engine will be completed.
- The seven Energy Integrated Farm projects will be completed and operational information will be available in final reports.
- Complete installation of the horizontal caster for thin strip casting at the U.S. Steel research facility.

Budget Request

The Office of Industrial Programs' FY 1987 Congressional Budget Request is $15,623,000 which is $21,173,000 less than the FY 1986 Appropriation.

Five subprograms of the industrial energy conservation program encompassing specific objectives and strategies to meet the overall industrial program objectives are:

- Waste Energy Reduction
- Industrial Process Efficiency
- Industrial Cogeneration
- Implementation and Deployment.
- Program Direction

In the following sections each of these subprograms is discussed in detail including the activities carried out with the requested budget level. Although this is the current plan for the activities within the subprograms there could be variations from project-to-project based on the findings of subsequent research stages.

	FY 1985	FY 1986	FY 1987 Request
Waste Energy Reduction:	$11,859,000	$11,174,000	$ 6,300,000

The FY 1987 Congressional Budget Request is $6,300,000. This is $4,874,000 less than the FY 1986 Appropriation. The goal of Waste Energy Reduction is to conduct research and to develop energy efficient technologies to recover energy contained in industrial waste streams and waste materials, and to more efficiently utilize the energy content of fuels. The research is addressed within three district areas: waste heat recovery, combustion efficiency, and industrial waste utilization. National laboratory management support and analysis for all of the industrial energy conservation program is included in this subprogram and support services.

The Waste Energy Reduction activities for FY 1987 have generally been reduced from the prior fiscal year request, in order to focus the work on longer-term, higher-risk areas of research. The economic self-interest of firms provides a strong incentive for the adoption of waste energy reduction concepts as soon as they are shown to be viable. The joint coal burner development with Fossil Energy will be concluded in FY 1986 and no additional effort will be undertaken in FY 1987. Efforts in the recuperator and heat pump programs have been realigned in FY 1987 to minimize any hardware development and to concentrate on materials development and laboratory studies of systems and application potential. Waste utilization project activity has been reduced to concentrate in fewer but high potential energy reclamation areas of liquid and solid wastes. The project for the generation and recovery of CO_2 from large coal-fired boilers has been increased in funding to complete a larger scale test of the technology to observe effects of larger scale operation on boiler performance. Program support functions at INEL, PNL, ANL &

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ORNL for project monitoring and proposal evaluation, as well as analytical support by selected contractors, has been reduced.

Combustion Efficiency: Combustion efficiencies range up to about 80 percent depending on process and system design and there is a need for technology which enhances the fuel flexibility of industrial systems and for more efficient combustion and heat transfer within the furnaces, boilers, and process heaters. The improved combustion efficiency program concentrates on these technology development areas.

The development of technology for using oxygen enriched combustion air will increase the overall efficiency of the combustion process through increased flame temperature, decreased excess air, decreased nitrogen pass-through, and higher combustion air preheat.

Oxygen enrichment activities in FY 1986 will be continued with the laboratory study and testing of combustors using enriched combustion air. In addition FY 1986 funds will be used to continue research on combustion controls for high temperature oxygen enriched combustion air to meet the faster response required by the high temperatures. In FY 1987 these activities will be continued, including improvements in heat transfer and fouling/corrosion control techniques.

The advanced slagging and non-slagging coal combustor development activity funded jointly with Fossil Energy will be concluded in FY 1986.

Waste Heat Recovery: This activity area is intended to establish a strong technology base to address current deficiencies which prohibit timely development of ceramic heat recuperators and heat pump technology for a wide range of industrial waste heat sources. Current heat recuperator technology cannot be effectively applied without severe degradation in performance or high cost penalties to an estimated 2 quads of thermal energy wasted with corrosive and potentially fouling high temperature exhaust systems. High temperature waste stream data is needed to solve problems and limitations of present heat exchanger technology. Similarly, development of new heat pump technology is needed to allow upgrading of an estimated 3.5 quads of process liquid and gas waste heat to a more useful process temperature level.

High temperature ceramic materials development will be continued in FY 1986 and FY 1987. The low cost silicon powder development will be completed in FY 1986 and the results will be disseminated to industry. In FY 1987, funds will be used to develop a gel casting technique, research on composite ceramics, and use of woven shapes coated with chemical vapor deposited materials. In FY 1986 work will continue on non-destructive test methods and service life prediction methods for ceramic heat exchanger components which operate in severe environments. This work will be completed in FY 1987 and sample flawed materials will be tested in the laboratory under various thermal environments to develop lifetime prediction techniques.

In FY 1986 concepts for various heat pump systems (chemical, magnetic, Rankine) will be evaluated and design studies initiated. Alternative working fluids for the systems will be included in the evaluation. Predictions of expected performance will be made. In addition the utilization of a new analysis technique, "pinch network analysis", will be explored for determining where heat pumps can be integrated into manufacturing processes. This design and analysis work will be continued with FY 1987 funds based on the network analysis work. A laboratory breadboard model of a heat of reaction concept heat pump will be built and tested to verify analytical predictions.

Industrial Waste Utilization: A variety of solid and fluid waste materials presenting serious environmental problems for industry could be economically recycled or converted into useful fuels or energy-intensive products, if suitable specialized technology existed. Innovative mechanical, biochemical and thermo-chemical processes for converting solid and liquid wastes into fuels and feedstocks, and for recovering and recycling organics, inorganics, fibers, used oils, and metals, are needed to foster the development of substantial new private industrial activity in this area.

In FY 1986 and FY 1987 biological waste conversion will be continued on various industrial wastewater streams and in FY 1987 paper mill liquid wastes will be treated using enhanced biological strains to improve the production of methane. The use of

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membranes for separation of high oil or organic content waste streams will be explored and the economics of separation will be evaluated. Various activities concerned with solid wastes will be continued in FY 1986 and FY 1987. Specifically, utilization of asphalt roofing wastes, discarded tires, auto shredder wastes, and textile wastes for use as fuels will be continued. Textile waste fibers are also being considered as a strengthener and filler for some injection molded plastic parts.

Laboratory investigation of waste CO_2 recovery from stack gases will continue in FY 1986 with a scale up of combustion testing in a 6 million Btu/Hr furnace. This work will be continued in FY 1987 to determine scale-up effects including cold wall radiant effects and deposits on boiler tubes. Industry appears very interested in this concept and if the 6 million Btu/Hr tests are successful, work will proceed on transferring the technology to them for a pilot scale test.

The laboratory test work on producing diesel fuel from cellulosic materials was completed in FY 1985 and a technical paper on the results was presented at the Biomass Energy Regional Association Conference. In FY 1986 work was continued on the drying of in-forest wood residues. A site test will be conducted to complete the activity.

Laboratory and Analytical Support: National laboratories provide significant support to Headquarters staff in managing the activities of the total industrial program and to perform technical analyses as required. The Idaho National Engineering Laboratory, Argonne National Laboratory, Pacific Northwest Laboratory and the Oak Ridge National Laboratory are the principal participants in providing this support. Most of the management support is performed by Idaho National Laboratory which, through the Idaho Operations Office, evaluates proposals, monitors about 70 projects, prepares RFP's and conducts special studies as required. In addition analytical support is provided directly to Headquarters staff by selected contractors.

	FY 1985	FY 1986	FY 1987 Request
Industrial Cogeneration:	$ 5,116,000	$ 4,377,000	$ 1,500,000

The FY 1987 Congressional Budget Request is $1,500,000. This is $2,877,000 less than the FY 1986 Appropriation. The goal of Industrial Cogeneration is to encourage research on improved energy conversion systems to meet various industrial cogeneration requirements including systems with high electrical to thermal output ratios; advanced low voltage; high current direct conversion devices; characterization of organic Rankine cycle working fluids; and bottoming cycles development and evaluation.

The Industrial Cogeneration activities have been reduced from the FY 1986 planned activities. Work on the externally-fired Brayton system will be concluded at the end of FY 1986. The steam diesel development will continue but at a lower level of funding. Direct conversion work on thermionics will be concluded in FY 1987 although the sodium heat engine work will continue. Bottoming cycle research will be phased out in FY 1986 and not continued in FY 1987.

Advanced Topping Cycle Systems: Increased use of industrial cogeneration can be fostered through development of higher electrical-to-thermal output ratio systems than are yielded by standard steam turbine concepts. In addition development of technologies which utilize coal as a fuel permit flexibility of fuel choice. The development of innovative cogeneration systems will aid in meeting a projected growth for cogeneration of over 80,000 MW by the year 2000.

In FY 1986 the coal combustor topping tests were completed for the externally coal-fired Brayton system. Tests will also be conducted for waste fuels. A design study for a low temperature (1600°F) turbine will be started and an economic analysis made to compare the system with/without a topping combustor.

Activities on the coal-water fired "steam diesel" will be continued in FY 1986 and FY 1987. A parametric design of a full scale engineering test facility diesel engine will be completed in FY 1986 which would be used for long term testing of coal/water slurry

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fuels. In addition, installation design of a generic coal-water fired diesel will be accomplished in FY 1986 and an industry interaction group will be formed to review the test results and share in test engine planning. In FY 1987 the steam diesel study and laboratory testing of a laboratory scale steam diesel will be continued to determine engine wear rates. Additionally, laboratory tests will be conducted on coal slurry rheology to overcome limitations in pumping high coal ratio slurries to the engine.

Conversion of Thermal Energy to D.C. Electricity: Direct conversion devices, such as the thermionic diode and the sodium heat engine, may be able to cost-effectively meet some of industry's 5,000 megawatt requirement for relatively low voltage d.c. power used in electrolytic cells and other processes.

As a result of the laboratory work conducted in FY 1985 including an evaluation of the thermionic diode economics, the planned activity for FY 1986 will concentrate on the development of a larger size, more efficient diode. The larger units will be designed and laboratory prototypes built for testing in FY 1986. In addition, new approaches, including new materials and modes of operation, will be explored for improved output.

A 1,000 watt laboratory sodium heat engine will be designed and built with FY 1986 funds and laboratory tested in FY 1987. Performance of the unit will be evaluated against predicted performance and the effect of scale-up compared with a prior 200 watt model.

Bottoming Cycles Development: Increased performance of the low temperature waste heat driven organic Rankine cycle (ORC) could be achieved through the development of tailored organic fluids. Bottoming cycle cogeneration systems operating in the 700°F and higher temperature range would achieve widespread use if they were developed to be economically available. These systems could add another 4000 MW of electrical power generation and save 0.25 quad of energy annually.

In FY 1986, performance evaluation of a composite material BiPhase separator, will be completed. In addition, laboratory testing of selected ORC working fluids will be continued. Evaluation of these ORC fluids under realistic operating conditions will determine their limitations and permit modification or "tailoring" of the organic fluids to overcome these limitations for use in improved ORC systems.

	FY 1985	FY 1986	FY 1987 Request
Industrial Process Efficiency	$10,712,000	$19,551,000	$ 5,479,000

The FY 1987 Congressional Budget Request is $5,479,000. This is $14,072,000 less than the FY 1986 Appropriation.

The Industrial Process Efficiency subprogram supports activities which reduce the technical and economic risks which prevent industry from investing in more energy-efficient processes, technologies and practices. It cost-shares research and development activity which industry would not undertake on its own for a variety of reasons. The technical issues addressed vary significantly among projects. They include, for example, such matters as understanding basic chemical reactions; the investigation and specification of materials properties: testing and application of advanced microprocessor, laser and other technologies to improve the measurement of chemical and mechanical properties; and bench scale tests to determine feasibility of new processes. Projects undertaken are continued to the point where the combination of risk and return on investment will result in private sector investment.

R&D on steel processing, including thin slab and thin strip casting of steel will be concluded in 1986. The thin slab contract with U.S. Steel and Bethlehem will be stopped before procurement of pilot plant equipment. This will require specific legislative authorization, as the FY 1984 and FY 1985 appropriations require DOE support of the technology through the pilot plant stage. FY 1987 funds will be for completion of tests on laboratory scale equipment, primarily the 17 inch wide horizontal twin belt caster. Further development of the single wheel casting approach will not be supported.

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There will be a reduction of approximately two-thirds in research on more energy-efficient smelting of aluminum and termination of further work on development of dry coating technologies. With funds requested for FY 1987, investigations into and testing of electrode materials at Pacific Northwest Laboratories will be cut back and basic materials research at MIT will be terminated. Funding for further dry coating development at Georgia Tech is not included in the budget request. In the area of sensors, the FY 1987 request will support continuation of research started with prior year budgets; however, R&D on new sensors is not anticipated.

Priorities in the FY 1987 Congressional Budget Request include the following areas: (1) Process electrolysis; (2) Materials processing; (3) Sensors and controls; and (4) Separation systems.

Process Electrolysis: Products such as aluminum, magnesium, chromium, manganese and chlor-alkali are manufactured using the energy intensive electrolytic reduction process. Electrolysis requires more than 1.1 quads of energy annually to reduce alumina and magnesium, and to produce chlor-alkali. The energy use efficiencies are typically less than 50 percent. The industries potentially affected have been averse to spending significant amounts of limited capital on intensified research and development activity to reduce energy consumption.

In the aluminum industry, for example, DOE is sharing the developmental costs for technologies which could reduce the electrical requirements from 7 to 5.0 Kwh per pound or lower. New cathodes could provide a wettable surface to aluminum. By forming a very thin, even and non-surging coating of aluminum on the surface of the cathode, the anode-cathode spacing can be reduced. In addition, candidate materials must possess excellent corrosion resistance to both aluminum and cryolite bath, with a high melting point which would enable them to withstand the elevated temperatures generated in the cell. Proprietary titanium diboride containing materials have been tested to date. Utilizing the experience gained to date and the laboratory equipment which has been developed, materials with varying compositions will continue to be tested.

Promising non-consumable anode and stable cathode materials have been developed. Testing and optimization are being undertaken. New methods of material application, resistant layer formation and attachment methods are being investigated. Success in these programs, combined with sensor development, will allow small scale testing in a self sustaining cell. Energy savings of approximately 25% are anticipated by the reduction of the anode-cathode distance. Additional energy savings will result from steady state operations over long periods of time with no anode change necessary. The most promising inert anode materials and fabrication techniques will continue to be tested. During FY 1987, additional work on selection and testing of candidate materials will be accomplished. Studies of bath chemical structure will be completed.

Materials Processing: A major change in steel processing is being investigated through two programs aimed at direct casting of thin steel slabs (.5 to 1.0 inch thick) or thin steel strip with thickness of approximately 0.050 inch. The potential energy savings associated with direct strip casting is 0.20 quad per year, based on avoidance of reheating, improved yield and less energy to roll a typical heavy cross section.

The thin slab program started in FY 1985, with initial work including feasibility studies, mathematical modeling of horizontal and vertical feeding designs, and construction/operation of a liquid steel test rig for horizontal machines. Parallel with this work was a major effort devoted to conceptual and detail design of a 17" horizontal twin belt casting machine, construction of which began in FY 1985.

In FY 1986 the testing of molten steel feeding systems will be made more rigorous by means of a 10 ton prototype system to test durability and performance of refractories. A smaller lab model of the vertical feeding design will be based on 2 tons of liquid steel throughput. Based on these tests, the final design of the feeding system is to be chosen by June 1986. The 17" horizontal simulator twin belt caster installation is scheduled for completion in April 1986, with start-up in June 1986. Extensive tests of laboratory scale casting systems will be performed during the first half of FY 1987. Product evaluation from these trials will be completed before choosing a casting direction for the pilot test unit. Work could then begin on a machine to produce thin slabs approximately 50 inches wide.

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The second project on direct casting involves technology development of thin strip steel casting with a thickness of.050 inch. The effort in FY 1985 was devoted to design, construction and installation of a water cooled wheel caster for producing a strip 4" wide. In FY 1986 the machine will be operated to produce 500 lb batches of steel for proof-of-concept, concluding that activity.

Sensors and Controls: Industry has found energy and process efficiencies are greatly enhanced through the use of automatic process control systems based on use of computers. The petroleum refining and petrochemicals industries which operate multi-process integrated plants were early practitioners of integrated automatic control. As the pulp and paper, steel, food processing, textile finishing and other industries move toward automatic process control, they have found the lack of accurate, on-line sensors to measure process parameters to be a serious hindrance. A major limitation on the use of process control systems is the lack of appropriate sensors which will operate in the environmental extremes of many industrial processes.

In cooperation with industry, DOE has initiated programs designed to meet some of the needs for sensors in the steel, aluminum, pulp and paper, textile and food industries. During FY 1987, research on means to accomplish in-situ chemical analysis of molten steel will be completed. Development of sensors which measure the dissolved alumina content in molten electrolyte, as well as in-situ measurement of other chemical constituents of the electrolyte and its temperature, would improve aluminum industry efficiency, and will be addressed with the FY 1986 program.

In conjunction with the pulp and paper industry, projects underway include a program to improve the wet pressing operation in papermaking, as well as sensors to measure important parameters in black liquor combustion, steam flow, pulp consistency to the paper machine, and moisture content of paper in the dryer. A number of these sensors are also potentially applicable to the textile and food industries. In FY 1987 the most promising sensors will be tested in grain drying, textile mill, paper manufacturing and other industrial plants.

Separation Systems: A critical and energy intensive step in many industrial processes is the separation/concentration of one or more chemical components in a solution or mixture. Typically the operation is effected through thermal evaporation, distillation or drying. These unit operations are usually the most energy-consuming on any manufacturing site. Alternative technologies which can be used to perform the required operations are intrinsically less energy-intensive. Such methods include membrane separations; freeze concentration; solvent extraction; critical fluid extraction; advanced drying concepts and others. Engineering development and process research work are required to apply these energy-conserving technologies to a multitude of industrial process streams.

Estimates place annual industrial energy consumption for evaporation and distillation alone at 2.6 quads. In addition, large amounts of heat and reusable chemicals are also lost in industrial, contaminated, hot process wastewater streams because no adequate separation technology is available. Large quantities of energy are used to remove water from process streams, and large amounts of it are lost in contaminated hot process wastewater solutions. The highly specialized technologies required to reduce this energy consumption have applications in many industries, no one of which generally has the incentives and/or capital to perform the work on its own. Further, much of the innovative work is being conducted by small engineering companies and universities which do not have the research funds to devote to these applications.

During FY 1985 and prior years, laboratory development and testing programs have been carried out for a variety of freeze concentration and membrane concepts. During FY 1986, basic research leading to improved understanding of the drying process will be accomplished, and completion of bench-scale tests on hydride freeze applications in the food industry.

FY 1987 activities will include completion of on-site testing of membranes for organic stream separations, concentration of various foods and caustic solutions. Development will continue on advanced drying processes and black liquor combustion.

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	FY 1985	FY 1986	FY 1987 Request
Implementation and Deployment:	$ 2,212,000	$ 2,978,000	$ 500,000

The FY 1987 Congressional Budget Request is $500,000. This is $2,478,000 less than the FY 1986 Appropriation.

The Implementation and Deployment program is characterized by a cooperative effort between government and industry to enhance industry awareness about the necessity of energy efficiency improvements and the cost effectiveness of investment in energy conservation. For a variety of reasons, an information gap often exists between the source of a technology and potential users. Significant energy savings are achievable if these gaps can be closed through an effective program of technology and information transfer.

The FY 1987 funding level requested results from the phase-out of: the industrial energy efficiency improvement reporting program and the Energy Analysis and Diagnostic Center energy audits for small manufacturers. For the reporting program, legislative repeal will be necessary to eliminate related statutory requirements of the Energy Policy and Conservation Act, as amended. FY 1987 funds will support scaled-back technology transfer activities, continuing to include technical seminars, symposia and publications.

Workshops and Seminars: This project provides cooperative support in the conduct of workshops, seminars and technical symposia on industrial energy conservation. Support may be provided for events both initiated and cosponsored by the DOE. Representative activities receiving past support have been the Industrial Energy Conservation Technology Conference and Exhibition sponsored by the Texas Public Utility Commission, and the World Engineering Conference held annually by the Association of Energy Engineers. Additional activities will be conducted as opportunities arise, having as their objective more effective technology transfer and improved energy productivity. Cooperative presentations will be made, on both specific technologies and general process improvements, with the major industrial trade associations and, as appropriate, national engineering and professional societies.

In FY 1987 support for selected industry, association and professional society conferences will continue at a reduced level. Targeted industry workshops and seminars will be conducted, with particular focus on technologies which have been developed with DOE support. These seminars will be implemented with the assistance of credible industrial associations and professional organizations. Attendees will be manufacturers and equipment producers who are in a position to make decisions which directly influence energy efficiency.

Publications: Information publication and dissemination are important elements of technology transfer. Publications concerning new and underutilized energy efficient technologies, with particular emphasis on those which have been developed with the assistance of the DOE, will be produced and distributed. These publications cover not only specific technologies but also address overall energy management for major industrial sectors.

With FY 1987 funds, development, review and publication of written materials, which provide information on projects sponsored by the DOE, will be accomplished. The specific publications will be determined by the status of individual projects and the nature of the intended audience. In general, publications will be produced with close cooperation and guidance from industrial associations, manufacturing corporations and/or professional engineering societies.

	FY 1985	FY 1986	FY 1987 Request
Program Direction:	$ 1,807,000	$ 2,016,000	$ 1,844,000

The FY 1987 Congressional Budget Request is $1,844,000. This is $172,000 less than the FY 1986 Appropriation. The request of $1,844,000 is for 26 full-time equivalent positions for conducting the program.

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DEPARTMENT OF ENERGY

FY 1987 CONGRESSIONAL BUDGET REQUEST

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KEY ACTIVITY SUMMARY

Waste Energy Reduction
($000)

Key Activity	Activities During FY 1985	Planned Activities During FY 1986	Planned Activities During FY 1987
Improved Combustion Efficiency Objective: To increase overall efficiency of combustion through increased flame temperature, decreased excess air, and higher combustion air preheat.	Continue laboratory development and testing of hollow fiber prototype cartridges for O_2 enrichment and evaluate results. Prepare reports on findings including an economic assessment of the technology. Initiate research in appropriate combustion control areas based on a state-of-the-art assessment of the technology.	Continue research in oxygen enriched air and high temperature combustion air. Perform laboratory studies of selected burners with oxygen enriched combustion systems. Conduct concept/feasibility studies on selected techniques for burner controls and instrumentation including corrosion and fouling detection.	Continue development of oxygen enriched combustion for process furnaces. Continue laboratory development for furnace combustion controls, and fouling prevention. Initiate direct contact boiler development.
	($800)	($900)	($800)
Advanced Coal Burner Development Objective: Develop coal-fired equipment that will retrofit existing oil-fired boilers without baghouses. (Joint project with Fossil Energy).	Continue system interaction testing of the two 50 MMBTU/HR prototype combustors to obtain performance characterization, environmental effects, and fuel evaluation (coal types). Conduct market analyses including coal type utilization, and environmental and customer acceptance assessments. Continue research on three additional innovative combustion concepts.	No activity.	No activity.
	($900)		

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FY 1987 CONGRESSIONAL BUDGET REQUEST

KEY ACTIVITY SUMMARY

Waste Energy Reduction
($000)

Key Activity	Activities During FY 1985	Planned Activities During FY 1986	Planned Activities During FY 1987
Advanced High Temperature Recuperators Objective: To develop high effectiveness heat exchangers that operate in various environments and can be produced at relatively low cost.	Continue ceramic materials development to produce high quality, low cost ceramic powders. Develop technology to fabricate complex ceramic shapes and to perform non-destructive evaluation of fabricated parts for flaw detection and service life prediction. Select designs of advanced heat exchanger concepts and initiate design of test modules for testing in severe environments. Fabricate test size fluid bed distributor plates and conduct laboratory tests to obtain performance data.	Continue development of only the most promising non-destructive test methods and service life prediction methods for ceramic heat exchanger components operating in severe environments. Develop waste stream characterization methods for high temperature dirty waste streams and conduct preliminary characterization of a selected stream. Initiate design of selected advanced heat exchanger modules for operation in corrosive, high temperature waste streams. Continue development of technology to produce low cost ceramic powders and fabricate complex ceramic heat exchanger shapes. Complete testing and evaluation of fluid bed ceramic distributor test plates in severe environments.	Complete development of non-destructive flaw detection techniques. Subject known flawed samples to laboratory thermal environments to generate lifetime prediction techniques. Continue development of composite ceramic materials for high temperature heat exchanger applications and new methods of component manufacture (woven/cvd coated and gel casting).
	($2,159)	($3,233)	($1,000)

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FY 1987 CONGRESSIONAL BUDGET REQUEST

KEY ACTIVITY SUMMARY

Waste Energy Reduction
(1000)

Key Activity	Activities During FY 1986	Planned Activities During FY 1986	Planned Activities During FY 1987
Advanced High Temperature Industrial Heat Pumps **Objective:** To integrate heat pumps into industrial process cycles to efficiently upgrade thermal energy for higher temperature process requirements.	Evaluate concepts for various types of heat pump systems and evaluate components along with alternative working fluids. Conduct design studies of these concepts. Prepare preliminary designs for several systems with alternative working fluids. Evaluate expected performance of these systems with various working fluids, materials compatibility, etc. Conduct a study of heat pump applications in the industrial sector and develop engineering specifications for integrated heat pump systems. ($3,000)	Continue evaluation of these heat pump systems and laboratory testing of engineering components. Conduct detail design studies of the most promising heat pump systems, including a reappraisal of performance and economics. Conduct an assessment of "pinch" network analysis and its application to process industries to locate points of integration of heat pumps into the process cycles. 35% of FY 1986 funds are being deferred. ($2,365)	Continue heat pump development. Build laboratory breadboard components for heat of reaction systems and test to verify analytical predictions. Using network analysis results, evaluate chemical heat pump systems for best match of heat pump characteristics and process requirements. Select suitable processes and heat pump types for detail system studies. ($1,000)

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FY 1987 CONGRESSIONAL BUDGET REQUEST

KEY ACTIVITY SUMMARY

Waste Energy Reduction
($000)

Key Activity	Activities During FY 1985	Planned Activities During FY 1986	Planned Activities During FY 1987
Liquid/Gaseous/Solid Waste Conversion Objective: To utilize industrial waste materials (gases, liquids/solids) as feedstocks, fuels or other usable forms.	Design and build a prototype high rate anaerobic reactor and conduct laboratory testing to verify performance characteristics. Initiate development of improved and waste specific biostrains.	Continue high rate reactor tests on industry supplied low solids content liquid waste materials. Investigate plasma pyrolysis of high solids content industrial liquid waste materials. Continue biostrain enhancement activity to improve conversion of waste to fuel. These activities utilize $19K of FY 1985 funds as well as $900K of new budget authority.	Continue high rate reactor tests with enhanced biostrains on paper mill wastes to produce methane for fuel use. Examine use of membranes for separations of high oil or organic content waste streams and economics of separation. Continue research to utilize solid wastes from asphalt roofing, tires, auto shredder and textile operations as fuels and industrial product feeds.
	($687)	($919)	($500)
Utilization of Waste CO_2 Stack Gas Objective: To utilize CO_2 waste stack gas as a product and for enhanced oil recovery.	Continue laboratory work and analysis of CO_2 generation and recovery including benefits and economics of application to electric utility and large industrial power plants.	Continue CO_2 development and analyze potential for cost-shared field tests. Conduct engineering and systems studies to locate potential CO_2 generation sites and use points for CO_2. Start 6 MM BTU combustion test.	Complete testing and evaluation of CO_2-O_2 enriched combustion to a 6 MM BTU furnace to ascertain cold wall radiant effect and tube deposition effects.
	($1,800)	($300)	($500)

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KEY ACTIVITY SUMMARY

Waste Energy Reduction
($000)

Key Activity	Activities During FY 1985	Planned Activities During FY 1986	Planned Activities During FY 1987
Forest Waste Utilization Objective: To more effectively utilize forest and agricultural residue and waste as industrial fuels.	Complete the design of the pilot scale engineering test facility to produce diesel fuel from cellulosics/polymers and provide laboratory support and instrumentation for continued process development. Complete compression drying of wood chips and bark to remove water to the 35% moisture content level and eliminate supplemental fuel oil firing for flame stability. Continue the development of the in-forest dried wood residue project.	Complete the in-forest residue wood dryer development and test at a participating site.	No activity.
	($500)	($ 300)	
National Laboratory & Analytical Support	($3,000)	($3,834)	($2,500)
Total: Waste Energy Reduction	$12,046	$11,491	($6,500)

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FY 1987 CONGRESSIONAL BUDGET REQUEST

KEY ACTIVITY SUMMARY

Industrial Cogeneration
($000)

Key Activity	Activities During FY 1985	Planned Activities During FY 1986	Planned Activities During FY 1987
Advanced Topping Cycle Systems **Objective:** Develop and test highly efficient cogeneration systems with high electrical to thermal ratio output and which utilize alternative fuels.	Continue development of externally-fired Brayton System. Complete natural gas topping combustor tests. Evaluate use of coal combustor for topping. Complete a design to build or modify a test stand for conducting air heater evaluation tests for the externally-fired Brayton system. Initiate a parametric design of a full scale engineering test facility diesel engine for long term testing of coal/water slurry fuels.	Continue development of Brayton system. Complete coal combustion topping tests for externally-fired Brayton system. Conduct laboratory tests utilizing waste fuels. Perform a design study for use of a lower temperature gas turbine to eliminate a topping combustor. Complete the parametric design for a steam diesel test engine. Complete the design of generic requirements for the test engine installation. Establish an industry interaction group to review test results and share in test engine planning. These topping cycle activities utilize $660K of FY 1985 funds as well as $3170K of new budget authority.	Initiate the steam diesel study and laboratory testing of a laboratory scale steam diesel to determine wear rates. Conduct laboratory studies of coal-water rheology.
	($2,316)	($3,830)	($800)

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FY 1987 CONGRESSIONAL BUDGET REQUEST

KEY ACTIVITY SUMMARY

Industrial Cogeneration
($000)

Key Activity	Activities During FY 1985	Planned Activities During FY 1986	Planned Activities During FY 1987
Thermal to Electrical Energy Conversion Objective: Develop systems for conversion of thermal energy to direct current.	Complete the engineering design of the chlor-alkali cell thermionic diode array and installation requirements. Initiate fabrication of the array and prepare for functional testing. Complete testing of 200 watt developmental sodium heat engine. Complete an engineering study of applications and economics. ($995)	Continue development of a larger more efficient thermionic diode which is more economic to manufacture. Build engineering prototypes and conduct laboratory tests. Evaluate new materials and modes of operation to improve output. Design and fabricate a 1,000 watt sodium heat engine laboratory unit. ($1,100)	Continue evaluation of new materials and design concepts for improved thermionic diodes. Continue development and testing of the 1,000 watt sodium heat engine laboratory model. Compare with predicted performance. ($700)
Advanced Bottoming Cycle Systems Objective: Develop and test cogeneration systems that operate using thermal process waste energy to produce electricity.	Continue materials testing for a biphase model separator made of composite materials. Continue Organic Rankine Cycle (ORC) working fluid evaluation. ($200)	Complete performance evaluation of a composite material biphase separator component in a model test unit. Continue laboratory testing of ORC fluids. ($300)	No activity.
Total: Industrial Cogeneration	$3,511	$5,138	$1,900

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FY 1987 CONGRESSIONAL BUDGET REQUEST

KEY ACTIVITY SUMMARY

Industrial Process Efficiency
[$000]

Key Activity	Activities During FY 1985	Planned Activities During FY 1986	Planned Activities During FY 1987
Process Electrolysis Objective: Conserve electricity by developing systems for more efficient electrolytic reduction of metals.	Continue development and testing of electrode materials. Characterize single crystals of potential materials. Analyze the chemistry of the Hall cell cryolite bath, and chemical reactions within the cell, with more advanced equipment. Commence metallographic analyses of materials. ($1,800)	Continue development, small cell testing and characterization of potential inert anode materials. Determine operating range and optimum conditions for candidate materials. Continue evaluation of cathode failure mechanism. Continue TiB_2 attachment work. ($1,500)	Continue evaluation of electrode materials. Test some promising inert anode materials and stable cathode attachment techniques. Complete studies of both chemical structure. ($500)
Materials Processing Objective: Reduce energy requirements in melting, forging, rolling and fabrication of materials.	Complete concept development/ evaluation, design of test facility for thin slab casting. Test alternative methods for feeding molten metal. Commence procurement of equipment for scale-up testing. Develop model for casting steel on a single wheel. Apply model to devise experimental plan for critical tests. Purchase melting equipment for industry lab tests. ($4,650)	Continue procurement and installation of 17 inch horizontal moving mold caster. Make selection of feeding system. Complete lab testing of single wheel design for casting 4 inch wide thin steel strip. ($7,069) $7,134K of new budget authority, for basic research and development on advanced concepts for steel production, is being deferred.	Conduct tests using horizontal moving mold caster. Document results and terminate project. ($1,679)

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FY 1987 CONGRESSIONAL BUDGET REQUEST

KEY ACTIVITY SUMMARY

Industrial Process Efficiency
($000)

Key Activity	Activities During FY 1985	Planned Activities During FY 1986	Planned Activities During FY 1987
Sensors and Controls Objective: To develop on line sensing devices to improve measurement of process parameters. Develop systems to enable more accurate and timely control of processes.	Complete research on laser-based sensor system for determining the chemical composition of molten metal baths. For alternative approach, test probe to produce stream of fine powder from molten metals. Design and test systems for powder transport and rapid analysis. Initiate feasibility testing of elevated temperature anti-fouling humidity sensors. Acquire lab data on pyrolysis mass spectrometer, lignin assay and combustion sensors, for design of bench scale units. Select mills at which to conduct testing of devices. ($1,806)	Continue development of sensors for on-line control of industrial processes that operate in extreme conditions of temperature, corrosive environment and pressures. Potential applications include molten steel analysis, 2 phase flow measurement, thermal profile of hot solids, lignin assay, humidity and combustion. Evaluate other sensors required for improved process efficiency, and develop a program plan to conduct R&D necessary for their development. ($2,000)	Initiate test of molten steel in-situ analysis sensor at steel plant sites. Continue testing of selected sensors at paper industry plant sites. Continue development of other sensors, including those with potential applications in humidity control and in-process property analysis. ($1,500)
Coatings Objective: Reduce the energy required to apply coatings to various surfaces.	Define parameters for depositing amorphous metallic coatings, conduct adhesion studies and test corrosion resistance in sulfuric acid and ferric chloride. Commence experiments and testing of alternative technologies for dry coating of textiles. ($636)	Continue development of dry coating system for textiles. Complete testing of amorphous metallic coating for adhesion, stability and corrosion resistance. Coat test specimens for exposure testing in an industrial environment. ($500)	No activity.

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FY 1987 CONGRESSIONAL BUDGET REQUEST

KEY ACTIVITY SUMMARY

Industrial Process Efficiency
($000)

Key Activity	Activities During FY 1985	Planned Activities During FY 1986	Planned Activities During FY 1987
Separations Research			
Objective: To develop more efficient technologies and equipment for accomplishing separation/concentration in a variety of industries.	Initiate economic assessments on freeze concentration applications in the paper industry. Complete laboratory tests, construct and test bench scale units for selected membrane technologies. Build and test a skid-mounted membrane unit for separating moisture from hot dryer exhaust. Construct a unit for testing membranes to separate sugars. Complete technical and economic analyses. Continue basic research on black liquor properties and combustion.	Complete bench scale tests of the hydrate freeze separation process for application to food. Initiate on-site membrane tests for separations applications in petrochemical and other industries. Continue lab and bench scale tests for concentration of food and caustic solutions with advanced membranes, and initiate testing of working substances for a tubeless evaporator. Continue research on black liquor properties and combustion. Initiate research on drying mechanisms and improved drying technologies in food and paper industries. These activities utilize $694K of FY 1985 funds, as well as $1,800K of new budget authority. $16K of FY 1985 funds are being deferred.	Complete on site testing of membranes for organic stream separations, concentrations of various foods and caustic solutions. Complete development of working substances for a tubeless evaporation process. Continue research on black liquor properties, concentration and combustion. Continue laboratory and bench scale research on energy efficient mechanical and thermal drying processes.
	($2,219)	($2,494)	($1,800)
Total - Industrial Process Efficiency	$11,111	$13,563	$8,479

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DEPARTMENT OF ENERGY

FY 1987 CONGRESSIONAL BUDGET REQUEST

KEY ACTIVITY SUMMARY

Implementation and Deployment
($000)

Key Activity	Activities During FY 1986	Planned Activities During FY 1986	Planned Activities During FY 1987
Industrial Reporting Program **Objective:** Carry out legislative mandate, and establish basis for joint activities with industry to improve industrial energy productivity.	Continue receipt and analysis of reports on energy efficiency improvement and recovered materials, which are required to be submitted by industry annually. Publish DOE annual report on industrial energy efficiency improvement. ($200)	Continue receipt and analysis of reports on energy efficiency improvement and recovered materials, which are required to be submitted by industry annually. Publish DOE annual report on industrial energy efficiency improvement. ($300)	No activity.
Energy Analysis and Diagnostic Centers **Objective:** (1) Define energy conservation opportunities for small and medium size firms. (2) From results of completed audits, develop case studies of conservation opportunities that can be pursued by small and medium sized firms.	Continuation of program to conduct audits with 12 participating universities. Implement, with industry and utilities, ways which the EADC concept could be leveraged for wider coverage. ($1,500)	Continuation of program to conduct audits, with 11 participating universities. Evaluate program results. ($1,400)	No activity.

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DEPARTMENT OF ENERGY

FY 1987 CONGRESSIONAL BUDGET REQUEST

KEY ACTIVITY SUMMARY

Implementation and Deployment
($000)

Key Activity	Activities During FY 1985	Planned Activities During FY 1986	Planned Activities During FY 1987
Technology and Information Transfer: Objective: Provide information on costs and benefits to industry of implementing new technologies or practices which are more energy efficient.	Support of technical meetings and symposia devoted to industrial energy use and efficiency. Conduct workshops on selected new technologies.	Continue to provide support to the conduct of workshops, seminars, and technical symposia on industrial energy conservation. Particular focus to be on technologies developed with DOE assistance. Develop, publish, and distribute written materials which address specific energy-saving technologies, as well as overall energy management for major industrial sectors. 30% of FY 1986 funds are being deferred.	Continue to provide support to the conduct of workshops, seminars, and technical symposia on industrial energy conservation, focusing on technologies developed with DOE assistance. Continue to develop, publish, and distribute written materials on energy-saving technologies.
	($ 496)	($ 1,484)	($ 500)
Total-Implementation and Deployment	$ 2,196	$ 3,194	$ 500
Program Direction	$ 1,767	$ 1,836	$ 1,844
Capital Equipment	$ 2,077	84	-
TOTAL: Industrial Energy Conservation	$37,708	$39,216	$13,623

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
LEAD TABLE
TRANSPORTATION
ENERGY CONSERVATION
(Tabular dollars in thousands. Narrative material in whole dollars.)

	FY 1985 Appropriation	FY 1986 Appropriation	FY 1987 Base	FY 1987 Request	Request vs Base
Transportation (CE)					
Vehicle propulsion R&D:					
Operating expenses	$31,569	$32,085	$32,085	$ 6,500	$-25,585
Alternative fuels utilization:					
Operating expenses	2,430	1,489	1,489	1,260	-229
Electric and hybrid vehicle R&D:					
Operating expenses	8,349	8,586	8,586	4,140	-4,446
Transportation systems utilization:					
Operating expenses	1,650	887	887	0	-887
Advanced materials development:					
Operating expenses	6,021	8,646	8,646	6,500	-2,146
High temperature materials laboratory:					
Operating expenses	0	289	289	0	-289
Construction	6,469	2,515	2,515	0	-2,515
Subtotal	6,469	2,804	2,804	0	-2,804
Capital Equipment	2,940	0	0	0	0
Program direction					
Operating expenses	1,913	2,140	2,140	1,400	-740
Total					
Operating expenses	51,932	54,122	54,122	19,800	-34,322
Capital equipment	2,940	0	0	0	0
Construction	6,469	2,515	2,515	0	-2,515
Total, Transportation	$61,341	$56,637	$56,637	$19,800	$-36,837
Staffing Total FTE's	33	36	36	22	-14

Authorization:
P.L. 93-577, "Federal Non-nuclear Energy Research and Development Act of 1974"
P.L. 93-275, "Federal Energy Administration Act of 1974"
P.L. 94-438, "Energy Reorganization Act of 1974"
P.L. 94-163, "Energy Policy and Conservation Act"
P.L. 94-413, "Electric and Hybrid Vehicle Research, Development and Demonstration Act of 1976"
P.L. 95-91, "Department of Energy Organization Act"
P.L. 95-238, "Department of Energy Authorizations for FY 1978"
P.L. 96-512, "Methane Transportation Research, Development and Demonstration Act of 1980"

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Department of Energy

FY 1987 Congressional Budget Request

Adjustments to FY 1986 Appropriations

	FY 1986 Conference	General Reduction	Management Initiatives	Pay Cost Restoration	Gramm-Rudman-Hollings Reduction	Adj. Approp. Total
Transportation						
Vehicle propulsion R&D						
Operating expenses	$34,470	$ -202	$ -741	$ ---	$ -1,442	$ 32,085
Electric and hybrid vehicle R&D						
Operating expenses	9,225	-65	-198	---	-386	8,586
Transportation systems utilization						
Operating expenses	960	-3	-20	---	-40	897
Alternative fuels utilization						
Operating expenses	1,600	-10	-34	---	-67	1,489
Advanced materials development						
Operating expenses	9,290	-66	-200	---	-388	8,646
Program direction						
Operating expenses	1,775	-10	-49	+521	-97	2,140
Capital equipment	---	---	---	---	---	---
High temperature materials lab.						
Operating expenses	---	---	---	---	---	---
Construction	3,010	-13	-65	---	-126	2,804
Subtotal, Transportation	$60,320	$ -351	$-1,307	$ +521	$ -2,546	$ 56,637
General Reduction:						
Operating Expenses	$ -336	$ +336	$ ---	$ ---	$ ---	$ ---
Construction	-15	+15	---	---	---	---
Total, General Reduction	$ -351	$ +351	$ ---	$ ---	$ ---	$ ---
Management Initiatives:						
Operating Expenses	$-1,242	$ ---	$+1,242	$ ---	$ ---	$ ---
Construction	-65	---	+65	---	---	---
Total, Management Initiatives	$-1,307	$ ---	$+1,307	$ ---	$ ---	---
Pay Restoration	+521	---	---	-521	---	---
Total, Transportation	$ 59,183	$ ---	$ ---	$ ---	$ -2,546	$ 56,637
Operating Expenses	$ 56,253	$ ---	$ ---	$ ---	$ -2,420	$ 53,833
Capital Equipment	---	---	---	---	---	---
Construction	2,930	---	---	---	-126	2,804

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
SUMMARY OF CHANGES
TRANSPORTATION
ENERGY CONSERVATION
(In thousands of dollars)

FY 1986 Appropriation enacted	$56,637
Program increases and decreases:	
Vehicle Propulsion R&D	
- complete proof-of-concept automotive gas turbine development	-13,957
- initiate follow-on gas turbine ceramic component development	+ 4,000
- conclude automotive Stirling engine development	-13,957
- continue adiabatic diesel research and development	- 291
- eliminate technology assessment and transfer activities	- 1,380
Subtotal	-25,585
Alternative Fuels Utilization	
- continue data collection and analysis of methanol-fueled vehicles	+ 220
- reduce synthetic fuels and conclude methane investigations	- 449
Subtotal	- 229
Electric and Hybrid Vehicle R&D	
- reduce battery R&D for EV application	- 1,025
- complete design phase only of ETX-II propulsion system	- 1,380
- eliminate data collection, site operator support, and test and analysis of vehicle technologies	- 1,925
- eliminate technology assessment and transfer activities	- 116
Subtotal	- 4,446
Transportation Systems Utilization	
- eliminate publication and distribution of Gas Mileage Guide and energy data collection and analysis	- 887
Advanced Materials Development	
- reduce R&D on structural ceramics for advanced heat engine application	- 2,146
High Temperature Materials Laboratory	
- funding for operational support included in Energy Research budget request under the Basic Energy Sciences Decision Unit	- 289
- complete funding requirements for HTML construction	- 2,515
Subtotal	- 2,804
Program Direction	
- reduce staffing level by 14 FTE	- 740
FY 1987 budget request	$19,800

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Program Objectives and Strategy:

The objective of the transportation program is to perform research and development on vehicles and engines which will increase the fuel efficiency of the transportation system and allow a switch from petroleum to electricity and alternative fuels. The strategies used to achieve these objectives are to: (1) establish proofs-of-concepts for advanced engine technology that have at least a 30 percent improvement in fuel efficiency over comparable conventional engines, meet emission, safety, and noise standards, have alternative fuels capability, and have competitive production costs; (2) develop technology for heavy duty diesel operation under uncooled and minimum friction conditions, having the potential of 30-40 percent fuel economy improvement over 1982 technology; (3) advance battery and propulsion system technology for competitive electric and hybrid vehicles for passenger car, van, or light truck application; (4) establish a fundamental ceramic and advanced materials technology base for heat engines; and (5) develop a utilization-oriented data base on switching from petroleum to fuels made from oil shale, coal, and biomass.

Accomplishments for FY 1985 and anticipated accomplishments for FY 1986:

- Operated ceramic turbine rotors up to 100 percent of engine design speeds in both the AGT-100 and the AGT-101 at reduced temperatures and power.
- Completed rig qualifications of AGT-101 ceramic static components at design temperature of 2500°F.
- Completed successful operation of the AGT-100 low-emission, pilotless ceramic combustor over the full engine design range.
- Completed design of the MOD II Stirling engine and initiated procurement of long leadtime hardware.
- Completed over 10,000 hours of engine test time on the MOD I Stirling engine design.
- Completed fabrication of first generation ceramic coated piston rings for adiabatic diesel evaluation.
- Completed characterization of friction and wear properties of candidate ceramic materials for use in adiabatic diesel piston ring and cylinder liner applications.
- Completed the development of an advanced single-shaft a.c. powertrain including installation in a test bed vehicle and dynamometer testing on the Federal Urban Driving Cycle with an experimental zinc-bromine battery.
- Completed the preliminary design and mission analysis for the dual-shaft a.c. propulsion system for an electric van application incorporating nickel-iron battery and field-oriented control electronics.
- Completed module development and battery subsystem design for advanced tubular-plate and sodium-sulfur technologies.
- Completed characterization testing of the GM Bedford electric vans and the Eaton a.c. propulsion system at the Idaho National Engineering Laboratory.
- Completed field test evaluations of battery thermal management systems, nickel-zinc battery systems, state-of-charge meters and the battery watering wand that demonstrated a reduction in watering time of up to 75 percent.
- Published and distributed approximately 3,000,000 copies of the 1985 model year Gas Mileage Guide.

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- Initiated introduction of methanol-fueled vehicles into the Federal fleet and established data collection and support procedures.

- Completed first-phase research effort to determine substitution for cetane method in measurement and specification of ignition quality with synthetic fuels.

- Completed development of a low thermal conductivity silicon carbide whisker reinforced mullite ceramic composite with greatly improved strength and toughness.

- Completed development of ceramics-to-metal brazing techniques with application to piston cap and turbine/rotor shaft attachments.

- Completed development of techniques for sol-gel coating of ceramic whiskers to enhance matrix/whisker interfacial properties.

- Completed development of a transformation toughened ceramic alloy capable of long time 1,000°C operation.

- Completed construction of the High Temperature Materials Laboratory at ORNL (end of FY 1986 or early FY 1987).

Vehicle Propulsion R&D ..... $ 6,500,000

The Vehicle Propulsion R&D FY 1987 budget request is $25,585,000 less than the adjusted FY 1986 Apropriation for these activities. The proof-of-c ncept Automotive Gas Turbine Program is scheduled to be completed in FY 1986, and the FY 1987 request includes the initiation of a less costly follow-on program for component development. The proof-of-concept Automotive Stirling Engine Program will be concluded in FY 1986, and no funding will be required in FY 1987. The Heavy Duty Transport Program, focused on the adiabatic diesel, will essentially continue at FY 1986 levels. The Technology Assessment and Transfer activities will be eliminated as separate activities in FY 1987. Technology transfer will be achieved through the industry involvement in specific program areas.

The goal of the Vehicle Propulsion R&D program is to encourage development within the automotive industry of more fuel-efficient, fuel-flexible and cost-effective transportation heat engine propulsion system options through support of research and development on technological barriers and proofs-of-concepts.

The technical objectives of the Vehicle Propulsion R&D program are: (1) achieving at least a 30 percent improvement in fuel economy over conventional heat engines, (2) meeting or exceeding established requirements for regulated emission levels, and (3) operating satisfactorily on a wide variety of fuels. To accomplish these objectives, research and development has been pursued on advanced heat engine concepts including the automotive gas turbine, the automotive Stirling engine, and the heavy duty adiabatic (uncooled, minimum friction) diesel engine. Common to the needs of all advanced heat engine concepts is the requirement to develop improved high-temperature materials and components.

The FY 1987 funding is necessary to allow continuation of the research and development activities required to establish an industry technology base on high-temperature, uncooled, minimum friction diesel engines. An uncooled, or adiabatic, heavy duty diesel engine integrated with a waste heat recovery technique has the potential for efficiency improvements in the 30 to 40 percent range. An industry assessment has provided identification of the technological barriers, and a phased development approach has been designed. The request will fund planned activities in ceramic component evaluations in a single-cylinder, uncooled engine; performance analyses of a baseline adiabatic diesel design; initial experimental emissions evaluations; upper-cylinder interface analyses and evaluations; and high-temperature engine heat transfer computer models. The funding will also provide for a follow-on program to

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continue ceramic component development for an automotive gas turbine engine. Although the Automotive Gas Turbine program (AGT), to be completed in FY 1986, will demonstrate the feasibility of the engine concept, further research and development on ceramic components processing and reliability is required before industry will consider the engine for commercialization. The program will utilize engines fabricated under the AGT program for test beds, and basic ceramic technology research results from the Advanced Materials Development program for improved component fabrication and evaluation. The Automotive Stirling Engine (ASE) Program will be concluded in FY 1986, and program results and experimental engines will be made available to industry.

Alternative Fuels Utilization ..... $ 1,260,000

The FY 1987 budget request for Alternative Fuels Utilization is $229,000 less than the adjusted FY 1986 Appropriation but essentially covers a continuation of FY 1986 activities. Funding is included for continuing data collection and analysis on Federal fleet methanol-fueled vehicles which was funded in FY 1986 with unexpended prior year obligations. Research and development projects on synthetic fuels utilization are stretched out. Investigations on methane utilization will be concluded in FY 1986.

The goal of the Alternative Fuels Utilization program is to accelerate the introduction of nonpetroleum-based transportation fuels by establishing a technology base for utilization of synthetic, biomass-derived, and gaseous fuels in both contemporary and advanced propulsion systems.

The FY 1987 funding is necessary to allow continuation of research and development activities focused on performance, emissions, optimization and wear characteristics of conventional and advanced engines using synthetic fuels derived from oil shale and coal syncrudes. Tests and evaluations are conducted on both single-cylinder and multi-cylinder engines, and the program will continue to provide industry and the scientific community with standardized synthetic test fuels. The funding will also allow continuation of the collection and analysis of data from the methanol-fueled vehicles operated as part of the Federal fleet.

Electric and Hybrid Vehicle R&D ..... $ 4,140,000

The Electric and Hybrid Vehicle R&D FY 1987 budget request is $4,446,000 less than the adjusted FY 1986 Appropriation for these activities. A major change in the FY 1987 request is due to the decision to complete the design phase only of the second-generation, single-shaft a.c. propulsion system (ETX-II) with termination of hardware fabrication. The development of the dual-shaft a.c. propulsion system will be continued in FY 1987 but at a lower level of effort and an extension of the schedule. Three final battery candidates will be selected from the six under development in FY 1986 for further development in FY 1987. Site operation testing, field evaluation, and data collection and analysis of available battery and drivetrain component technologies will be concluded and laboratory testing phased out in FY 1987. The data base results will be published and made available to industry developers. Technology assessment and transfer activities will be eliminated as a separate activity in FY 1987. Substantial industry participation in the development activities will provide effective technology transfer in current technology areas.

The goal of the Electric and Hybrid Vehicle program is to develop the technology in cooperation with industry that will lead to the production and introduction of electric vehicles into the Nation's transportation fleet and substitute more abundant sources of energy for petroleum-based fuels.

The FY 1987 funding is necessary to continue the development of an advanced lead-acid battery technology based on the flow-through electrolyte concept for improved energy density, sustained power density and longer life. The request will fund the continuation of development of the promising sodium-sulfur and zinc-bromine battery

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technologies for the electric vehicle application including thermal management and system optimization. Funding is necessary to continue development of the advanced dual-shaft propulsion system technology, including the integration of nickel-iron battery technology, towards a level of maturity that will allow industry to make a quality decision regarding its viability.

Transportation Systems Utilization ..... $ 0

No funds are being requested for the publication and distribution of the Gas Mileage Guide. Gas mileage information is required on the stickers of all new cars. DOE will submit a legislative initiative to remove the mandatory printing and distribution of the Guide. DOE will encourage the private sector (automobile publications and newspapers) to print the fuel economy information when it is released each new model year by the Environmental Protection Agency. This approach is capable of reaching a much wider audience than DOE publication of the Guide.

The collection, analysis, and presentation of transportation energy data in the Transportation Energy Data Book will not be continued. DOE will rely on the private sector to provide analysis of current energy usage and projections of transportation activity and energy use.

Advanced Materials Development ..... $ 6,500,000

The FY 1987 budget request for Advanced Materials Development is $2,146,000 less than the adjusted FY 1986 Appropriation for similar activities. The decrease results from focusing the materials effort onto the highest-payoff areas and making effective use of the new High Temperature Materials Laboratory where such efforts are being consolidated.

The goal of the Advanced Materials Development program is to develop an industrial technology base in structural ceramics, ceramic composites, and coatings capable of providing reliable and cost-effective components for high-temperature, efficient transportation propulsion systems while eliminating requirements for scarce strategic materials.

The efficiency and economics of advanced heat engines are materials limited, and utilization of high-temperature ceramic components and coatings is a key technology need. Although ceramics have demonstrated the potential temperature and environmental resistance capabilities necessary, substantial research is required to achieve adequate strength, toughness, and other specific properties needed before reliable ceramic components can be produced commercially. The technology developed within the program, as well as the availability of the High Temperature Materials Laboratory being constructed under the program at Oak Ridge National Laboratory, will have significant spinoffs for increasing the efficiency and productivity of a wide range of other industrial applications in addition to transportation.

The funding in the FY 1987 request is necessary to continue phased activities on existing contracts and research projects and initiate some new research projects essentially in accordance with a limited stretch-out of the Ceramic Technology for Advanced Heat Engines Program Plan. The program activities will include projects on materials and processing of monolithic silicon nitride and silicon carbide, oxide matrix and dispersion toughened composites, thermal and wear zirconia-based coatings, and ceramic-to-metal and ceramic-to-ceramic joining; materials design methodology for dynamic interfaces; data base/life prediction for time dependent behavior; IEA Standardization; and program management and coordination.

High Temperature Materials Laboratory ..... $ 0

The FY 1987 budget request does not include funding for the High Temperature Materials Laboratory (HTML) since the final increment of required construction funds was appropriated in FY 1986. During FY 1987 the HTML will initiate operations, and begin

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placement of personnel for the permanent User Staff. Based on the fundamental and cross-cutting nature of the operations to be conducted at the HTML, funding for the operational research staff will be included in the Basic Energy Sciences budget of the Office of Energy Research beginning in FY 1987. The Transportation Appropriation for FY 1986 included funding for pre-operational support during construction of the HTML, and this change plus the completion of construction funding accounts for a total reduced need of $2,804,000 from FY 1986.

Program Direction ..... $ 1,400,000

The FY 1987 budget request for Program Direction is $740,000 less than the adjusted FY 1986 Appropriation, as a result of a reduction of 14 FTE positions. The funds requested provide for 22 FTE positions to develop strategies, plans and resource requirements, and provide the integrated program management necessary to conduct the research and development of the various transportation technologies described in the budget request.

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
KEY ACTIVITY SUMMARY

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TRANSPORTATION
Vehicle Propulsion R&D
(dollars in thousands)

Key Activities	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Automotive Gas Turbine	Continue proof-of-concept automotive gas turbine engine development with two industry teams; continue integration of qualified ceramic components until final configuration is reached and characterized. ($14,681)	Complete proof-of-concept automotive gas turbine engine development with two industry teams reaching engine dynamometer testing of completely ceramized configuration. ($14,283)	Initiate ceramic component development using experimental engine test beds. ($4,000)
Automotive Stirling Engine	Continue proof-of-concept automotive Stirling engine development; complete a paper design of the MOD II engine; continue technology base development. ($13,418)	Complete MOD II engine development with preliminary testing of prototype engine on dynamometer. Close out contractural obligations. ($8,939) $5,344K to fabricate additional engines and expand testing to include vehicles are deferred.	No activity. ($0)
Heavy Duty Transport (Adiabatic Diesel)	Continue component development stage of promising ceramic components and	Initiate component evaluations of developed ceramic components in single-cylinder	Continue component evaluations in single-cylinder test cells; continue industry design of

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TRANSPORTATION
Vehicle Propulsion R&D
(dollars in thousands)

Key Activities	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Heavy Duty Transport (cont.)	coatings, solid lubricants and gas bearings, and ceramic joining/interface methodology; initiate system integration investigation of single-cylinder test and evaluation capability; complete adiabatic operation system models. ($2,000)	test cell and utilize results for second stage component developments; complete design of baseline engine configurations; initiate industry design of multi-cylinder heavy duty proof-of-concept adiabatic diesel engine. ($2,858)	baseline multi-cylinder adiabatic diesel system; conduct initial experimental uncooled engine emissions evaluations; complete heat transfer models for adiabatic diesel operation. ($2,500)
Technology Assessment and Transfer	Continue vehicle propulsion technology assessments in industry and government; conduct technology transfer activities, including conferences, workshops, publications, etc., to assure transfer of technology developed within DOE to other government agencies and industry. ($1,254)	Continue vehicle propulsion technology assessments in industry and government; conduct technology transfer activities, including conferences, workshops, publications, etc., to assure transfer of technology developed within DOE to other government agencies and industry, using $1,402K of new Budget Authority and $220K of FY 1985 funds. ($1,622)	No activity. (Technology transfer activities will be conducted as part of program activities.) ($0)
Subprogram Totals	$31,353	$27,702	$6,500

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
KEY ACTIVITY SUMMARY

TRANSPORTATION
Alternative Fuels Utilization
(dollars in thousands)

Key Activities	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Alcohols	Initiate introduction of methanol-powered passenger automobiles into the Federal fleet; establish vehicle specifications, site locations, data collection and analysis systems and fuel stations. ($899)	Collect and analyze data on Federal methanol-fueled vehicles, using $81K of unobligated FY 1985 funds and unexpended prior year obligations. ($81)	Continue data collection and analysis on Federal methanol-fueled vehicles through second year. ($220)
Synthetic Fuels	Continue basic fuel/engine performance/emissions investigations to identify and provide understanding of engine problems associated with use of synthetic fuels; update data base with new information; initiate evaluation methodology for high-temperature engine environments. ($1,291)	Continue performance, emissions, wear, and optimization investigations on conventional and advanced engines using synthetic fuels; perform single- and multi-cylinder dynamometer tests; update information data base and industry interface; provide industry and scientific community with standardized test fuels. ($1,323)	Continue to generate data on conventional and advanced single- and multi-cylinder engines using synthetic fuels; make test fuels for project activities and continue to provide industry and scientific community with standardized test fuels. ($1,040)

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TRANSPORTATION
Alternative Fuels Utilization
(dollars in thousands)

Key Activities	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Methane (Gaseous Fuels)	Continue to conduct investigations on identified technology problems in diesel engines and update data base for industry use. ($286)	Conclude investigation of technology and institutional barriers; conduct performance and emissions evaluations and update information data base. ($200)	No activity. ($0)
Subprogram Totals	$2,476	$1,604	$1,260

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
KEY ACTIVITY SUMMARY

TRANSPORTATION
Electric and Hybrid Vehicle R&D
(dollars in thousands)

Key Activities	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Electric Vehicle Battery R&D	Continue development of lead-acid and nickel-iron battery technologies including electrolyte and thermal control systems. ($1,075)	Continue development of lead-acid and nickel-iron proof-of-concept complete battery systems, conduct R&D on flow-through and immobilized electrolyte effort of lead-acid battery. ($1,400)	Continue development of advanced lead-acid battery technology based on the flow-through electrolyte concept. ($775)
	Continue program to advance sodium-sulfur battery technology as required for electric vehicle application with emphasis on statistical analysis to determine optimum cell configurations. ($450)	Complete development of packaging, thermal management and optimum cell and module configuration analysis of sodium-sulfur battery for LV application, using unexpended prior year obligations. ($0)	Continue development of complete sodium-sulfur battery technology including thermal management and optimum cell configuration for electric vehicle application. ($1,000)
	Conduct vehicle application studies of potential promising advanced systems and concepts, e.g., lithium-metal-sulfide batteries, fuel cells, motors and controller technology to determine the feasibility of technology	Continue vehicle application studies to identify potential promising advanced battery systems and concepts, using unexpended prior year obligations. ($0)	Continue development of zinc-bromine battery subsystem for electric vehicle application. ($500)

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TRANSPORTATION
Electric and Hybrid Vehicle R&D
(dollars in thousands)

Key Activities	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Electric Vehicle Battery R&D (cont.)	for unlimited range electric or hybrid vehicles; conduct research on problems associated with nickel-cadmium batteries, including power density, weight reduction, cost-reduction and maintenance. ($460)	$2,722K to develop bi-polar lead-acid, zinc-bromine, nickel-zinc, iron-air and nickel-cadmium battery technology and to transfer battery support functions to INEL are deferred.	
Electric Vehicle Propulsion Systems	Continue development of a first generation single-shaft a.c. propulsion system including evaluation of advanced battery subsystems; explore the next generation of technologies for the single-shaft a.c. propulsion system that includes improved magnetic materials for the traction motors, reduction of electronics complexity and overall packaging improvement. ($1,492)	Complete first generation of single-shaft a.c. propulsion system and evaluation of advanced battery systems; continue development of next generation of the single-shaft a.c. propulsion system including an improved a.c. permanent magnet motor and control system and advanced battery system, using new budget authority and $2.5M reprogrammed from EV loan program and unexpended prior year obligations. ($725) $125K to transfer single-shaft a.c. propulsion system engineering support to INEL are deferred.	Complete design phase only of the second generation single-shaft a.c. propulsion system (ETX-II) using unexpended prior year obligations, and terminate hardware fabrication. ($0)

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TRANSPORTATION
Electric and Hybrid Vehicle R&D
(dollars in thousands)

Key Activities	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Electric Vehicle Propulsion Systems (cont.)	Continue development of advanced dual-shaft a.c. propulsion system technology incorporating technologies for nickel-iron traction battery, a.c. induction motor, multi-speed automatic transaxle, and controller/power inverter, culminating with the development of complete experimental proof-of-concept propulsion systems tailored for and evaluated in test-bed vans. ($1,772)	Continue advanced dual-shaft a.c. propulsion system technology development program. ($1,950) $125K to transfer dual-shaft a.c. propulsion system engineering support to INEL are deferred.	Continue advanced dual-shaft a.c. propulsion system technology development. ($1,640)
Test and Evaluation	Continue laboratory and in-vehicle dynamometer testing and analysis of new battery and system technologies, developed both within and outside the Department over prescribed driving cycles. Continue life, durability and charging regime sensitivity testing of experimental batteries. ($2,784)	Continue laboratory and in-vehicle dynamometer testing and analysis of new battery, powertrain and vehicle technologies at the Idaho National Engineering Laboratory. Identify charge/discharge sensitivity of immobilized electrolyte batteries to temperature variations. Conduct performance characterization testing of the prototype field test van developed jointly by DOE and EPRI. ($1,350)	Phase out laboratory and in-vehicle dynamometer testing of battery and powertrain technologies at the Idaho National Engineering Laboratory. ($225)

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TRANSPORTATION
Electric and Hybrid Vehicle R&D
(dollars in thousands)

Key Activities	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Test and Evaluation (cont.)		$48K to transfer engineering support functions to INEL. are deferred.	
	Continue data collection and analysis and provide technical support to electric vehicle site operators. Evaluate new technologies in fleet operations through Site Operators' User Task Force. ($442)	Continue collection and analysis of data with emphasis on the viability of new technologies integrated into operational fleet vehicles. Continue to provide technical support to electric vehicle site operators. ($250) $476K to evaluate additional new technologies in fleet operations through Site Operators' User Task Force are deferred.	Conclude test and evaluation in fleet operations using unexpended prior year obligations. ($0)
Technology Assessments and Transfer	Stimulate the transfer of technology development within DOE to industry through workshops, seminars, technical manuals and assessments; conduct special test activities as appropriate to provide supportive data on new technologies determined to be promising candidates for industry products, using funds included	Continue technology transfer activities including a meeting for vehicle users, manufacturers, and the research community to discuss current progress and future coordinated R&D efforts; conduct workshops on battery maintenance training for new technologies; hold seminars for the evaluation of advanced EV technologies and dissem-	No activity. (Technology transfer activities will be conducted as part of program activities.) ($0)

TRANSPORTATION
Electric and Hybrid Vehicle R&D
(dollars in thousands)

Key Activities	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Technology Assessments and Transfer (cont.)	in above projects. ($0)	date information in a timely fashion. ($113) $5K of unobligated FY 1985 are deferred.	
Subprogram Totals	$8,475	$5,788	$4,140

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
KEY ACTIVITY SUMMARY

TRANSPORTATION
Transportation Systems Utilization
(dollars in thousands)

Key Activities	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Gas Mileage Guide	Publish and distribute the Gas Mileage Guide to 26,000 car and light truck dealers throughout the Nation to assist consumers in the purchase of fuel efficient vehicles. ($196)	Complete the publication and distribution of the Gas Mileage Guide for model year 1986, using $296K of FY 1985 funding. ($296) Publish and distribute the Gas Mileage Guide for model year 1987; request DOE Policy Office to conduct survey to show the declining use of the Guide. ($457)	Introduce legislation to amend P.L. 94-163 so that publication and distribution of the Gas Mileage Guide is not Congressionally mandated. Transfer program to the private sector via automotive magazines and newspapers. ($0)
Driver Awareness Training	Implement a nationwide fuel efficiency driver training program (DECAT) at selected regional sites and Nevada Operations Office to include driving instructors from State and local agencies, high schools and private industry. ($345)	No activity. ($0)	No activity. ($0)

TRANSPORTATION
Transportation Systems Utilization
(dollars in thousands)

Key Activities	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Ridesharing	Initiate a program to encourage ridesharing, including the identification and removal of barriers such as income tax and zoning regulations; assist State, local and private sector groups to develop initiatives to promote ridesharing. ($335)	No activity. ($0)	No activity. ($0)
Analysis and Assessment	Continue to collect, analyze and distribute transportation energy utilization data; continue to analyze conservation impacts under various options and future fuel scenarios; continue the technology transfer of heavy duty vehicle research. ($485)	Continue to collect, analyze and present transportation and energy data in the form of an annual Transportation Energy Data Book; continue to assess market conditions for fuel efficient technologies; continue to prepare baseline projections of future transportation energy use for Office program assessments. ($250)	No activity. ($0))
Subprogram Totals	$1,361	$1,203	$0

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
KEY ACTIVITY SUMMARY

TRANSPORTATION
Advanced Materials Development
(dollars in thousands)

Key Activities	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Ceramic and Ceramic Composites	Continue basic ceramic technology research projects, including development of improved powders, high-temperature properties evaluation of ceramic composites, ceramic/ceramic joining, nondestructive evaluation of green state ceramics, statistical concepts for design methodology, 3D modeling and processing, characterization and densification of green state ceramics; continue interface with government/industry research laboratories; continue utilization of advanced heat engine programs for test and evaluation sources. ($6,021)	Continue ceramic technology research projects in materials and processing, ceramic composites, thermal and wear coatings, joinings, design methodology and monolithic structure life testing; continue projects to include scale-up of improved powder synthesis, composites, and life prediction for composite materials. ($8,846)	Continue ceramic technology research projects in processing of monolithics; dispersion toughened and oxide matrix composites; thermal and wear coatings; design methodology for dynamic interfaces; time dependent behavior of developed ceramics; joining ceramics to ceramic and metals; and development of international standards for mechanical testing and characterization of ceramic materials and components. ($6,500)
Subprogram Totals	$6,021	$8,846	$6,500

DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
KEY ACTIVITY SUMMARY

TRANSPORTATION
High Temperature Materials Laboratory
(dollars in thousands)

Key Activities	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
High Temperature Materials Laboratory	Finalize construction contract and complete site preparation, foundations, and major structural framing; initiate preparation of specifications for major items of research equipment. ($6,531)	Required funding to complete construction. ($2,579)	Funding complete in FY 1986. ($0)
	Establish Industry Overview Committee; set up user centers operational procedures; manage acquisition of research equipment; design research staff requirements. (Funded from Advanced Materials Development Program in the amount of $160K)	Continue pre-operational support activities. ($295)	Continue pre-operational support activities and initiate placement of personnel for the permanent User Staff. (Funding included in the Basic Energy Sciences Budget of the Office of Energy Research)
Subprogram Totals	$6,531	$2,874	$0

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
KEY ACTIVITY SUMMARY

TRANSPORTATION
Capital Equipment
(dollars in thousands)

Key Activities	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Advanced Materials Development	Procure unique laboratory equipment, e.g., ceramics injection molding unit, high-temperature cracks growth test instrumentation and ceramics hot isostatic press. ($1,993)	Complete acquisition of unique laboratory equipment, using $56K of FY 1985 funds and unexpended prior year obligations. ($56)	No activity. ($0)
Electric and Hybrid Vehicle Test and Evaluation	Procure unique laboratory equipment, e.g., automated cycling and test instrumentation, for the Idaho National Engineering Laboratory. ($700)	Complete acquisition of unique laboratory equipment, using $280K of FY 1985 funding. ($280)	No activity. ($0)
Subprogram Totals	$2,693	$336	$0

DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
KEY ACTIVITY SUMMARY

TRANSPORTATION
Program Direction
(dollars in thousands)

Key Activities	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Program Direction	Provide support for 36 FTE positions to develop strategies, plans and resource requirements, and provide the management necessary to conduct research, development, test and evaluation programs. ($1,828)	Provide support for 36 FTE positions to develop strategies, plans and resource requirements, and provide the management necessary to conduct research, development, test and evaluation programs. ($1,693) A total of $496K in new Budget Authority and $405K in prior year funds are deferred.	Provide support for 22 FTE positions to develop strategies, plans and resource requirements, and provide the management necessary to conduct research, development, test and evaluation programs. ($1,400)
Subprogram Totals	$1,828	$1,693	$1,400
Transportation Totals	$60,738	$50,048	$19,800

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
MULTI-SECTOR
LEAD TABLE

(Tabular Dollars In Thousands. Narrative Material In Whole Dollars)

	FY 1985 Appropriation	FY 1986 Appropriation	FY 1987 Base	FY 1987 Request	Request Vs Base
Multi Sector (CE)					
National Appropriation Technology and Assistance Service					
Operating Expenses	$ 1,470	$ 1,396	$ 1,396	$ 750	$ -646
Capital Equipment	---	---	---	---	---
Subtotal	$ 1,470	$ 1,396	$ 1,396	$ 750	$ -646
Energy Related Inventions Program					
Operating Expenses	$ 4,900	$ 4,653	$ 4,653	$ 3,300	$-1,353
Capital Equipment	---	---	---	---	---
Subtotal	$ 4,900	$ 4,653	$ 4,653	$ 3,300	$-1,353
Energy Conversion and Utilization Technologies					
Operating Expenses	$15,463	$18,097	$18,097	$15,200	$-2,897
Capital Equipment	1,666	930	930	100	-830
Subtotal	$17,129	$19,027	$19,027	$15,300	$-3,727
Program Direction (ECUT)					
Operating Expenses	$ 292	$ 498	$ 498	$ 500	$ +2
Subtotal	$ 292	$ 498	$ 498	$ 500	$ +2
Total					
Operating Expenses	$22,125	$24,644	$24,644	$19,750	$+4,894
Capital Equipment	1,666	930	930	100	-830
Subtotal	$23,791	$25,574	$25,574	$19,850	$-5,724
Total, Multi-Sector	$23,791	$25,574	$25,574	$19,850	$-5,724
Total FTE's	4*	9*	9*	8*	-1

Authorization: P.L. 93-577, Federal Nonnuclear Research and Development Act of 1974.
P.L. 95-91, Department of Energy Organization Act.

*FTE and associated costs are for Energy Conversion and Utilization Technologies only.

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Department of Energy

FY 1987 Congressional Budget Request

Adjustments to FY 1986 Appropriations

	FY 1986 Conference	General Reduction	Management Initiatives	Gramm-Rudman-Hollings Reduction	Adj. Approp. Total
Multi-Sector (CE)					
National Appropriate Technology and Assistance Service					
Operating Expenses	$ 1,500	$ -9	$ -32	$ -63	$ 1,396
Energy Related Inventions Program					
Operating Expenses	5,000	-30	-108	-209	4,653
Energy Conversion and Utilization Technologies					
Operating Expenses	19,440	-112	-418	-813	18,097
Capital Equipment	1,000	-6	-22	-42	930
Subtotal	$20,440	$ -118	$ -440	$ -855	$19,027
Program Direction (ECUT)	535	-3	-12	-22	498
Subtotal, Multi-Sector	$27,475	$ -160	$ -592	$-1,149	$25,574
General Reduction:					
Operating Expenses	$ -154	$ +154	$ ---	$ ---	$ ---
Capital Equipment	-6	+6	---	---	---
Total, General Reduction	$ -160	$ +160	$ ---	$ ---	$ ---
Management Initiatives:					
Operating Expenses	$ -570	$ ---	$ +570	$ ---	$ ---
Capital Equipment	-22	---	+22	---	---
Total, Management Initiatives	$ -592	$ ---	$ +592	$ ---	$ ---
Total, Multi-Sector (CE)	$26,723	$ ---	$ ---	$-1,149	$25,574
Operating Expenses	$25,751	$ ---	$ ---	$-1,107	$24,644
Capital Equipment	972	---	---	-42	930

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
SUMMARY OF CHANGES
ENERGY CONSERVATION
MULTI-SECTOR
(In thousands of dollars)

FY 1986 Appropriation enacted	$25,574
Program increases and decreases:	
Energy Conversion and Utilization Technologies	
Combustion and Thermal Sciences:	
Eliminate research on microemulsion fuels technology, advanced heat transfer, and direct contact heat exchanger	-1,226
Materials:	
Maintain level of effort in high-temperature materials and materials-by-design research; terminate research on lightweight and corrosion-resistant materials	-184
Catalysis/Biocatalysis:	
Terminate research on direct use off enzymes in biochemical reactors and in catalysis-by-design	-192
Tribology:	
Eliminate research on mechanisms of friction and wear of ceramics and reduce level of effort in lubricants, tribological coatings, and data retrieval system	-1,355
International Research Monitoring:	
Maintain minimum level of tracking international energy conservation research	-40
Conservation Program Analysis and Planning:	
Initiate Conservation program oversight and long-range planning activity	+100
Energy-Related Inventions Program	
Reduce number of grants awarded by DOE for ERIP	-1,353
National Appropriate Technology and Assistance Service	
Reduce funding for NATAS	-646
Capital Equipment	
Reduce capital equipment for national laboratories and Historically Black Colleges and Universities	-830
Program Direction	
Reduce number of FTE's for ECUT from 9 to 8	+2
FY 1987 budget request	$19,850

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
PROGRAM OVERVIEW
Energy Conservation - Multi-Sector

This request is for $19,850,000 for the Multi-Sector Conservation Program: $15,300,000 for the Energy Conversion and Utilization Technologies (ECUT) Program, $3,300,000 for the Energy-Related Inventions Program (ERIP), and $750,000 for the National Appropriate Technology Assistance Service (NATAS).

Energy Conversion and Utilization Technologies

The primary mission of the Energy Conversion and Utilization Technologies (ECUT) Program is to expand and solidify the generic technology base that supports initiatives by both the DOE end-use Conservation programs and U.S. private industry to improve the efficiency of energy conversion and utilization systems. ECUT research is aimed at understanding and improving techniques, processes, and materials that push the thermodynamic efficiency of energy conversion and usage beyond the state-of-the-art. ECUT also assesses the current state of energy conservation technologies in foreign countries to provide a comparative assessment of U.S. efforts in important conservation technologies.

There are four distinguishing features of ECUT research compared to other Department research programs: (1) it is a program of directed basic research (problem oriented) that anticipates future end-use sector needs, (2) it focuses on solving problems that may be common to more than one energy-consuming sector (for example, understanding combustion phenomena), (3) it makes a concerted effort to seek out, encourage, and support new ideas and concepts, and (4) it provides predictive models and design tools for use by the private sector to improve designs, to scale (up and down) processes, and to create new hardware aimed at achieving increased energy productivity.

ECUT currently conducts programs in four interdisciplinary research areas: Combustion and Thermal Sciences, Materials, Biocatalysis, and Tribology. Each of these activities contributes to accomplishing the following goals:

- Establish the feasibility of revolutionary concepts that offer the potential for significantly reducing energy consumption in energy conversion processes and energy end-use.
- Monitor advances in research and engineering both in the United States and abroad, and evaluate them for applicability to energy conservation.
- Carry out exploratory development on novel or innovative conservation concepts.
- Expand and place on firm footing the technology base for energy conservation technologies.
- Ensure a continual flow of information on new conservation-related technical advances to the DOE end-use sector Conservation programs and to private industry.

ECUT accomplishments for FY 1985 and anticipated accomplishments for FY 1986:

- Successfully used simplified engine experiments, flow reactor studies and real engine tests to develop and validate a comprehensive chemical kinetics model for simple fuels to study engine knock. Gained insight essential to the development of environmentally safe additives or to devise more effective fuel-blending strategies.
- Found differences in the low-temperature ignition kinetics of alternative fuels that were not evident in the traditional American Society for Testing and Materials (ASTM) cetane rating procedure. The experimental technique, which was co-funded by ECUT and the Office of Transportation Programs, provided insight

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into fuel characteristics which are essential to improving the ignition and combustion properties of broad-specification fuels.

- Successfully obtained the first two-dimensional measurements of the structure of a propagating turbulent flame in an operating internal combustion engine, thus providing an essential input to the development of physically realistic, predictive models of flame propagation in engines.

- Completed first experiments using ECUT Reversing Flow Test Facility to develop performance profiles of annular regenerators. These efforts were conducted in cooperation with the Office of Buildings and Community Systems and the Office of Transportation Systems in support of the development of Stirling engine and heat pump technologies.

- Developed heat exchanger vibration analysis for accurate prediction of tube bundle instabilities. The computerized analysis capability can now be used by designers to predict the internal crossflow field for each tube in a tube bundle and to identify those tubes most likely to experience fluid elastic instability, together with the instability vibration amplitude.

- Licensed Ni_3Al alloy technology to Cummins Engine Company for development and use as combustion chamber materials for truck diesel engines.

- Identified an ordered metallic alloy with high-temperature (2,000°C) capabilities potentially rivaling those of ceramics.

- Filed two patent applications and one patent disclosure as result of ECUT work on reactive metal brazes to join ceramics to ceramics and/or to metals. Private industry is now showing interest.

- Developed SiC whisker reinforced Al_2O_3 ceramic composite cited by Science Digest as one of the top innovations of 1985. This composite is now being sold commercially by Greenleaf Corp. for use in cutting tools.

- Completed research which first showed feasibility of producing ceramic powders in a rotary kiln. Advanced Refractory Technology (ART), Inc. is now marketing SiC ceramic powders produced in this manner.

- Completed development of models which predict effects of aging on rigid urethane foam insulation. This has enabled Mobay Chemical and Jim Walker Corp. (Manufactured Homes) to apply these models to make better insultating foam, i.e. foam which is more stable and has a higher R-value.

- Discovered a new ductile ordered metallic alloy based on magnesium.

- Designed selective inhibitors and immobilization systems for enzymes (e.g. thermolysin) using ECUT-developed predictive models. This is important because enzymes generally lose their catalytic activity when they are tied down (immobilized).

- Demonstrated in laboratory experiments a new technique to stabilize genetic information in microorganisms. This is important because the genetic information engineered into microorganisms by the usual recombinant DNA techniques tends not to get transferred when the microorganism reproduces.

- Demonstrated a bioreactor concept that used a hydrogen gas atmosphere (as opposed to the usual oxygen environment) to increase process efficiency and product specificity.

- Demonstrated a bioreactor concept having an 80-fold increase in productivity over that of a conventional fermenter.

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- Showed in laboratory experiments that a novel method of delivering elevated temperature (200°-600°C) lubricants from the gas phase is a workable method for lubricating machinery at these temperatures. Similar work in powdered lubricants, which offers the same promise of delivering lubricants exactly when needed, may solve some of the lubrication problems of advanced engines.

- Determined the amount of hard coatings necessary for industry to systematically implant tribological coatings for cams, gears, toolbits, etc., in order to impart less expensive substrate materials with more desireable friction and wear properties. These coatings are more than 10 times harder and only 20 percent greater in cost than state-of-the-art coatings available today.

- Established a prototype computerized data retrieval and information system that will provide the scientific and engineering community with up-to-date tribological data and information. This system will enable engine designers, for example, to manipulate mathematical models from many different sources at their work stations in a user-friendly manner. Jointly sponsored by a whole host of professional societies, this system is the first of its kind in the United States and is the result of international cooperation with Canada and West Germany.

Energy Conversion and Utilization Technologies.....$15,300,000

This request is to provide funds to expand the technology base for the Conservation program. Funding of $15,200,000 is requested for the following research areas: Combustion and Thermal Sciences, Materials, Biocatalysis, and Tribology, along with $100,000 in capital equipment for research instrumentation.

Combustion and Thermal Sciences $4,800,000

The FY 1987 request for Combustion and Thermal Sciences is $4,800,000, a reduction of $1,226,000 from the FY 1986 appropriation.

Combustion and Thermal Sciences

The ECUT Combustion Technology Research Program was established to promote the design and development of energy-conserving combustion systems and devices. Since combustion is the fundamental process for converting fuels into usable energy, improved understanding can yield significant benefits in virtually all end-use applications. Research in this program is focused to study problems associated with the development and evolution of comprehensive predictive capabilities for combustion systems.

The technical objective of the Combustion Technology Research activity is to provide a set of proven analysis and measurement techniques and a better understanding of combustion and combustion-related processes for intermittent and continuous combustion systems and devices. The ECUT activities are structured to ensure the usefulness and availability of these capabilities to designers of engines in industry. Laser-based diagnostics and multidimensional computations are used to investigate precombustion fluid motion, fuel preparation, sprays and turbulence in combustion, and emission formation mechanisms. Research groups, which include DOE national laboratories and university and industrial researchers, convene periodically to study specific combustion-related problems in engines as well as stationary combustors. Activities are designed to bridge the gap between basic research and engineering development phases of technology development. In addition, investigations of innovative combustion system concepts are conducted, e.g. pulse combustion systems and other concepts that are specially designed to improve system efficiency and fuel flexibility. Through the International Energy Agency, the Combustion Technology Research Program collaborates with the major energy consumers of the free world.

The technical outputs of the ECUT Combustion Technology Research Program include proven

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advanced diagnostic techniques, experimental data, validated computer models, innovative concepts, state-of-the-art technologies and expanded scientific and technical knowledge.

The FY 1987 funding includes resources to continue activities in Engine Combustion Technology and in Continuous Combustion Technology projects. Through close interaction with industry, ECUT focuses research which has been identified as essential to the development and improvement of advanced engine concepts. These concepts are devised to improve fuel economy and enhance the ability of internal combustion engines to use alternative fuels without compromising established emission requirements. Efforts are further encouraged via an annual token cost-share from the Motor Vehicle Manufacturers Association (MVMA) to support the application of advanced diagnostic techniques. The following is a description of each project for FY 1987:

Engine Combustion Technology

The Engine Combustion Technology research project will focus on:

(1) Events that are believed to promote the occurrence of engine "knock" in dilute homogeneous-charge and direct injection stratified-charge engines. Engine knock limits an increase in compression ratio that can improve thermal efficiency of an engine and thus decrease fuel consumption. Engine knock phenomena will be investigated by examining the nature of the chemical processes and the fluid mechanics prior to, during, and just after the event. This will permit research to impact both the needs of the fuel supplier as well as those of the engine designers.

(2) Fluid mechanics/combustion interactions in internal combustion engines with particular emphasis on the importance of turbulence in the combustion process. The behavior of internal combustion engines is greatly influenced by the fluid motion in the intake manifold and within the cylinder. In-cylinder processes that govern engine performance, such as mixing, combustion, and heat transfer, are to a great extent controlled by the turbulence and bulk fluid motions.

(3) The role of sprays in diesel engine combustion with special emphasis on mixing rate of the charge air and fuel, soot formation, and emissions. The importance of emission and particulate mitigation cannot be overstated. While significant improve-ments have been realized in recent years, automobiles continue to be the largest single source of air pollution in the world today. In addition, this research will provide insight into the feasibility of multi-fuel use in such innovative concepts as pulse combustors.

(4) The role of in-cylinder convection and radiation heat transfer on engine operating efficiency. Heat losses generally account for an estimated 60 percent of the difference between ideal fuel-air cycle efficiency and indicated efficiency which translates to a 5 percent reduction in engine efficiency due to heat losses. Understanding the relationship of the various processes of heat transfer in engines will lead to a reduction of this heat loss quantity. An efficiency gain of approximately 3 percent appears attainable.

Continuous Combustion Technology

The Continuous Combustion Technology research project will continue to focus on enhancing the understanding of and providing experimentally validated analytical capabilities for spray and turbulent combustion, advanced combustion concepts, and corrosion/erosion of combustor components. In addition, special projects with relevance to enhancing the feasibility of combustion technology are pursued. These areas are described below:

(1) Spray and turbulent combustion. The ECUT program couples experimental investigations of particulates and fuel droplets with spray combustion modeling activities to study the effects of structure and physical properties of fuel on combustion. In the combustion of fuel-oil sprays, the liquid fuel drops change

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into carbonaceous porous sphere-like particles called cenospheres. These cenospheres burn and the products determine the majority of the deposits found on metal surfaces, promoting corrosion/erosion. Trace compounds existing in the initial fuel drop have a much higher concentration in the cenospheres than in the original fuel. Therefore, work will be continued toward the development of a dense spray computer model which will include the formation an subsequent combustion of the cenospheres.

(2) Advanced combustion concepts. Research will continue in the area of pulse combustion. Pulse combustion is a process by which combustion of fuels is driven by self-sustained oscillations. Pulse combustors have been built in a variety of sizes and shapes and have been fired with oil, gas, and coal. However, acceptance and development of pulse combustion systems have been hindered by high noise levels and the complex underlying theory of their operation. Small changes in configuration have significant effects on performance. Designs have evolved more by trial and error and from empirical correlations than from the application of basic principles. The high combustion intensity, minimal standby losses, and potential for superior heat transfer make pulse combustion a very desirable energy-conserving technology. The coupling of experiments and modeling activities will allow for a more complete analysis capability than combustion that has been limited to natural gas as a fuel. FY 1987 efforts will continue to investigate the effect of liquid and solid fuels on the operating parameters and therefore on the performance and emissions of pulse combustion. Research will couple the apparent basic principles of combustion and heat transfer processes.

Thermal Sciences

The objective of the Thermal Sciences activity is to provide a comprehensive technology data base for use by industry to design and further the development of conversion systems and devices with enhanced performance and reliability over those currently available. Applied and exploratory research is undertaken to develop experimentally validated analysis and computerized data bases necessary to strengthen the private sector's design and development abilities.

The FY 1987 Thermal Sciences research activity will continue to serve as the focus for the relevant needs of advanced conversion system development, responding to the needs of both the private sector as well as those of the DOE and other Government-sponsored programs. Efforts are closely collaborated with industry, universities, the DOE national laboratories, and other Government-sponsored researchers. Cooperative activities are underway with the Gas Research Institute (GRI) and the DOE Buildings and Community Systems and the Transportation Programs. In addition, there is International Energy Agency collaboration in Heat Transfer and Heat Exchangers involving six participants from the free world.

In the Thermal Sciences activities, a comprehensive experimental program was initiated in FY 1985 to exploit the capabilities of the specially designed Reversing Flow Test Facility (RFTF). The RFTF is the first-of-a-kind in the United States. It was designed as an experimental facility to study the aspects of energy conversion cycles with the ability to simulate real cycle processes, in particular those characterized and affected by reversing, or oscillating, flow conditions. This effort was continued in FY 1986 to study the thermodynamics and fluid dynamics in major components of closed-cycle systems and to validate analysis methodologies currently being developed. FY 1987 activities will complete the development of improved general purpose computer models for analysis and optimization for use in the design of advanced energy conversion systems that employ such closed-cycle designs as free piston and kinematic Stirling engine systems. The experimental results from the RFTF will be used to accurately validate these and other such computer models.

The initial research for the RFTF was started in FY 1985 to investigate the aspects of regenerator theory as it relates to performance for real systems. Continued in FY 1986,

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this effort has undertaken to examine flow maldistribution problems apparent in Stirling engine regenerator designs. Recent analyses of annular regenerators such as those used in free-piston and automotive Stirling engine designs have revealed the possibility that these maldistribution problems contribute to heat conduction losses, resulting in low efficiency operation. In addition, there continue to exist unexplained differences between theory and actual practice which are believed to contribute significantly to heat transfer-related inefficiencies evident in energy conversion systems. These differences are believed to be due primarily to inaccurate estimations of pressure drop for flows through complex channels and a lack of adequate understanding of actual flow conditions, i.e. steady vs. unsteady flow conditions. The continuing research focuses on the identification of controlling mechanisms in regenerator flows, with an objective to establish specific guidance for regenerator design.

Materials $5,400,000

The FY 1987 Request for the ECUT Materials Project is $5,400,000, a decrease of $184,000 from the FY 1986 appropriation.

The ECUT Materials Project seeks to identify and develop new materials and processing concepts of potential use to energy conservation. ECUT monitors and picks up on the wealth of research opportunities coming out of basic research programs, particularly those funded by the DOE Office of Basic Energy Sciences and the National Science Foundation. ECUT develops sufficient data on the properties and performance characteristics of these materials and processing concepts and conducts research to improve them to the point that either an end-use program or industrial firm will undertake engineering development or make use of the new material in its components, devices, or systems.

The requested level of FY 1987 funding is necessary to maintain most research currently underway in the areas of high-temperature materials and materials-by-design. Research on lightweight materials and corrosion resistant materials will be terminated.

High-Temperature Materials

ECUT high-temperature materials research currently underway will be continued in FY 1987 for the following:

- Ductile Ordered Metallic Alloys
- Ceramic Attachments
- Ceramic Materials.

Ductile Ordered Metallic Alloys: Metallic materials with ordered atomic structures such as long-range ordered (LRO) and intermetallic alloys have not been utilized until now despite their potential for superior performance (e.g., four times the yield strength of conventional materials at elevated temperatures) due to their characteristic brittleness. These high-temperature materials have the unusual property of increasing in strength with increasing temperature and can withstand other severe operating conditions, such as corrosive environments.

ECUT research is focused on the initial measurement and improvement of engineering properties (yield strength, ductility, creep, fracture toughness, etc.) of these materials needed by designers of future high-performance energy conservation concepts and on delineating the limits of improvability of these properties.

In early 1982, after more than 30 years of failure by numerous researchers, a breakthrough was achieved at Oak Ridge National Laboratory in the ability to make one member of the family of intermetallic compounds, nickel aluminide (Ni_3Al), highly ductile (on the order of 50%). ECUT immediately provided the major funding necessary to capitalize on this basic research breakthrough and began to support the characterization and

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improvement of this material. This research will continue in FY 1987.

Like the LRO alloys, the ordered intermetallics increase in strength with increasing temperature. Presently this yield strength increases up to a certain point and then begins a gradual decline. However, no reason has yet been found why this strength should not continue to increase right up to the decomposition temperature which far exceeds 1000°C. In FY 1987 ECUT will continue research toward understanding this mechanism of increased temperature stability in nickel aluminide and applying this knowledge to other members of the intermetallic family of alloys, such as aluminides of titanium, iron, and magnesium, to name just a few.

Ceramic Attachments: ECUT ceramic joining work seeks to ensure the availability of methods to join ceramic components together whenever they can be manufactured. Such techniques are important because they will allow ceramic components to be used economically in large operational systems such as heat engines and heat exchangers.

ECUT research aims to increase the understanding of the problems and limitations inherent in joining and bonding ceramics to ceramics and ceramics to metals. In FY 1987, joining ceramic materials by means of microwave heating and verification of the residual stress finite element predictive models for both brazed and unbrazed joints for five basic joint geometries will be continued. Work to understand and model interfacial phenomena important in ceramic attachment also will be continued.

Ceramic Materials: Ceramic materials fail catastrophically through the growth and propagation of defects, particularly cracks initiated at free surfaces. The principles behind methods of toughening are to reduce the size and number of defects and to provide in the ceramic matrix a secondary phase that can absorb the crack propagation energy and arrest it. In the case of transformation toughening, a minor phase absorbs the energy by undergoing a diffusionless phase transformation to a higher energy but nevertheless stable phase. In the case of compositing approaches, a minor phase such as a fiber with some ductility is provided to absorb the energy by elastic and plastic deformation.

In FY 1987 ECUT will continue investigating the reasons for the brittleness of ceramics and will continue researching methods to toughen them by compositing and modifying their surfaces by ion implantation and other techniques. In addition, novel techniques for producing near net shape ceramic samples will be pursued.

Compositing will include combining various ceramics with the LRO alloys and/or aluminide materials discussed above. These efforts could make fabrication of reliable, high-strength ceramic components possible. The work using ion implantation and lasers to modify ceramic surfaces toughens them by arresting surface-initiated cracks.

For all of this ceramics research, an effort has been made to avoid duplication of effort throughout DOE by coordination through the DOE Energy Materials Coordinating Committee, Subcommittee on Structural Ceramics. This subcommittee has made a compilation and analysis of all structural ceramics research underway in all DOE programs having structural ceramics research components. This analysis is available upon request and shows quite clearly the major areas of focus and complementarity of the various DOE programs. Avoidance of duplication with other agencies, such as DARPA, continues to occur by information exchanges such as those which take place at the annual Interagency Coordination Meeting on Ceramics for Heat Engines. This coordination notwithstanding, efforts will be made in FY 1987 to effect the orderly transfer of ECUT-initiated ceramics research to the Ceramic Technology for Advanced Heat Engines program in the Office of Transportation Systems and to phase out ECUT's involvement in this most important area of materials research and development.

Materials-By-Design

The present practice of energy conversion system designers is to select materials on the basis of their appropriate performance characteristics and cost. In general, materials are screened on a trial and error basis to see how well they perform in a component or

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system of interest (e.g., engine, heat exchanger, etc.). Although such testing will always be necessary, the selection of candidate materials on the basis of fundamental physical quantities common to all materials (e.g., the structure and bonding of the atoms or molecules in the material) is not done yet and could lead to the design of totally new and improved performance materials. In order to design materials it is necessary to understand the relationship of the desired properties (e.g., ductility) and performance characteristics (e.g., high-temperature survivability) to the structure and bonding taking place and the role of defects in the material. Given such understanding, a hierarchy of structural and bonding models can, in principle, be constructed to predict the properties to be expected of any given assembly of atoms or molecules. In FY 1984 ECUT initiated an assessment of the state-of-the-art of these models and to provide feedback on further modeling research needs for resolution by basic researchers.

Areas where this materials-by-design approach may be helpful are in the formulation and development of new high-temperature alloys, coatings, and polymers.

Actual research was begun in FY 1985 to capitalize on advances in theory and experimentation coming from basic materials research sponsored by the DOE Office of Basic Energy Sciences. The approach is to apply to materials design problems a combination of the unique experimental and theoretical tools put in place by this same basic research program at the DOE national laboratories in a concerted effort to make use of basic knowledge of the relationship between bonding and structure at the atomic level to selected materials related problems of importance to energy conservation. Application to interfacial phenomena, e.g., adhesion of coatings to substrates, catalytic mechanisms, grain boundary bonding in intermetallic alloys, and bond energies at tribological surfaces are particularly important to energy conservation. In FY 1987 research will be continued to model trial structures of grain boundaries in Ni_3Al with the goal of applying knowledge gained to design new and different intermetallic alloys.

The potential economic importance of this initiative may be seen by a brief consideration of the fact that for just the binary intermetallic alloys (those composed of only two basic elements like nickel and aluminum) there are over 3,700 possible combinations. Each combination potentially represents a totally new material such as the Ni_3Al discussed above. In order to screen and try out each and every one of these 3,700 alloys would be a very expensive and time-consuming task. However, if reliable computer models were available to predict the most promising combinations, only these few would actually have to be tested and experimentally proven in the laboratory.

Catalysis/Biocatalysis $2,400,000

The FY 1987 request for the ECUT Biocatalysis Program is $2,400,000, a decrease of $192,000 from the FY 1986 appropriation. This level of funding will maintain research already underway in bioprocess engineering.

An Office of Technology Assessment (OTA) report, "Commercial Bio-Technology, An International Analysis," stated in the foreword:

> Although the United States is currently the world leader in both basic science and commercial development of biotechnology, continuation of the initial preeminence of American companies in the commercialization of biotechnology is not assured. In the next decade, competitive advantage in areas related to biotechnology may depend as much on developments in bioprocess engineering as on innovations in genetics...and other areas of basic science.

The OTA report essentially identified bioprocess engineering applied research as the weakest link in the U.S. biotechnology research effort.

ECUT recognized this deficiency in support for generic applied bioprocess engineering some 5 years ago and for this reason has been focusing its efforts on bioprocess engineering research.

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Bioprocess Engineering

With the advent of recombinant DNA techniques for engineering specific capabilities into microorganisms, it became possible in principle to produce enzymes (biocatalysts) on demand for carrying out specific chemical reactions. ECUT focuses on resolving major generic technical barriers (such as lack of kinetic data and scale-up equations) that impede the use of genetically engineered microorganisms to carry out biologically catalyzed (biocatalyzed) continuous chemical production processes. Such processes have the potential to save process energy not only because of the ability of biocatalysts to carry out exactly the desired chemical reaction in one step (thereby avoiding large energy inputs for intermediate product purification and separation) and at the mild reaction conditions prevailing in biocatalyzed reactions but also to make use of renewable or more abundant feedstock than conventional chemical processes.

A typical problem being researched in genetically engineered microorganisms is the stabilization of the genetic information which has been inserted to make the organism produce desired chemicals. Usually some of this information is lost each time the microorganism divides. While this loss of genetic information is not a great problem in bench scale (1 cubic meter size) fermenters, it can be a major problem for industrial scale (1000 cubic meter size) continuous processes where the microorganisms reproduce millions of times, perhaps to the point where in a very short time none of the useful genetically engineered microorganism is left. This is just one example of the kinds of problems encountered by biochemical engineers who want to design and scale up biocatalyzed production processes; ECUT has made major strides in solving this particular problem by inserting the desired genetic information directly into the cellular chromosomes where it cannot be lost upon cell division.

In FY 1987, work will be maintained on innovative bioreactor designs for biocatalyzed chemical production processes. These innovative approaches to carrying out biochemical reactions hold the promise of overcoming some of the problems which have prevented biochemical production processes from competing economically and energetically with conventional chemical processes. Some of these problems are: slow reaction rates, low yields, and low productivity of conventional batch fermenters. Already ECUT research on one concept has resulted in a potential 80-fold increase in bioreactor productivity over such conventional batch fermenters.

Tribology $2,400,000

The FY 1987 request for the ECUT Tribology Program (the multidiscipilinary science of friction, wear, and lubrication) is $2,400,000, a decrease of $1,355,000 from the FY 1986 appropriation.

The foundation for the long-range plan of the ECUT Tribology Program is a series of detailed analyses that determined energy losses due to a poor understanding of tribology in the transportation, industrial, residential, and utility sectors. Considering that approximately 72 quads of energy are used in the United States each year, these losses are quite sizeable: up to 0.15 quad could be saved in the aggregate in the mining, agriculture, foodprocessing, chemicals, pulp and paper, primary metals, and metalworking industries; up to 0.5 quad could be saved in the utility sector; and up to 2.8 quads could be saved in the transportation sector. While transportation obviously has the greatest losses, the generic nature of ECUT research permits considering automotive applications in the context of the temperatures at which a heat engine operates, and as a result, the needs of many industrial applications can be easily tied together with automotive research needs.

The major approach of this tribology research is to explore innovative lubrication concepts and novel surface modification techniques that mitigate friction and wear in present-day and advanced energy conversion and utilization devices. In this manner, it may be possible to effect major energy savings in the U.S. economy. What makes this program unique is that it is a directed basic research program: it spans the gap between the basic research funded by the DOE Office of Basic Energy Sciences and the engineering

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development work funded by the Conservation and Fossil Energy offices. Cost-shared projects with these DOE offices are one means of developing and strengthening the technology base and transferring the technology to users. The major output of the ECUT Tribology Program is the development of standardized test procedures, data for the design of advanced mechanical systems, and state-of-the-art analytical equipment used to carry out cutting edge research on real world tribological systems.

Lubricants

ECUT tribology research answered the question in FY 1985 as to why various lubricating base stock oils perform differently with identical additive packages, an inconsistency in behavior that has hindered advancement in lubricating technology. The compounds in base stock oils that interact beneficially with the lubricant additives have now been identified, and that knowledge was transferred in late FY 1986 to the lubricant and additives industry by means of a workshop with researchers in those industries. This understanding opened up a whole new avenue in additive formulation chemistry because some of these base oil compounds can now be investigated as new additives for friction, wear, and oxidation control. As sources of crude oils that are suitable for base stock oil production become depleted, the results of this research will become even more important. Efforts in FY 1987 will build on this work, which dealt with low-temperature (up to 200^{0}C) liquid lubricants, and use it as a foundation for research on liquid lubricants for elevated (200^{0}-600^{0}C) temperatures. Liquid lubricants for the elevated temperature range are viewed by the tribology community as a major technological challenge and a limiting technology to advanced heat engines.

Efforts began in FY 1986 to carefully define the precise tribological conditions existing in machine elements, such as bearings, gears, and engine components, so that development of in-situ diagnostic techniques to study lubricant interaction could begin in FY 1987. This work is important because a better understanding of the lubricant conditions in actual working machine elements will enable designers to develop predictive models for lubricant failure and thereby avoid tribological problems in mechanical equipment.

In FY 1985 a final report on high-temperature (greater than 600^{0}C) lubrication needs for advanced heat engines was used to develop a comprehensive plan for this area of research. The main conclusion of the report was that the full potential of ceramic components for advanced heat engines cannot be realized unless associated tribological advances are made. The long-range plan, therefore, calls for developing new and/or improved laboratory scale tests capable of differentiating between high-temperature thermal-oxidative stability and deposition characteristics of individual basestocks, additives, and lubricants relative to the machine environment. By advancing the state-of-the-art, ECUT tribology research will enhance the likelihood of development of a low heat rejection, minimum friction engine. Close coordination and joint projects with the DOE/Office of Transportation Systems, the Department of Defense, and the National Aeronautics and Space Administration will continue in this area in FY 1987.

Mechanisms of Friction and Wear

Research funded by the ECUT Tribology Program over the past several years in the area of understanding the friction and wear characteristics of ceramics is now paying off. The DOE Office of Transportation Systems is using the technology base developed by ECUT to aid in determining which ceramics to use in advanced heat engines, and the new theory of wear of ceramics developed by ECUT has enabled that Office to understand better what happens under the actual operating conditions of such engines. Because the major problems seem to be solved, ECUT funding in FY 1987 will be used to complete contracts on the mechanisms of friction and wear of ceramics and to close out research in this area.

Friction and Wear Testing

Preparatory to beginning a new research thrust in FY 1986, a workshop was held in FY 1985 that was the first of its kind. The Workshop on Tribological Test Devices and Pro-

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cedures for Ceramics brought together almost 100 scientists and engineers from 5 different countries. The consensus of the attendees was that the time had come to develop standardized friction and wear tests in order to ensure comparability of data. As a result of this workshop, international cooperation was enhanced in FY 1986 by the fact that ECUT researchers actively participated in a round robin series of friction and wear tests under the sponsorship of the European Economic Community. Again, the results of these tests will be used to determine how to develop standardized test procedures.

Also in FY 1986, the ECUT Tribology Program had coordinated with the American Society for Testing and Materials (ASTM), the American Society of Mechanical Engineers, and others to intitate a program in developing meaningful standardized friction and wear tests for ceramic materials. Test rigs and analytical equipment were used to develop tests that could be certified by standards and professional organizations. Plans for FY 1987 call for approval by ASTM of a standardized test and further development of standardized test procedures for materials other than ceramics, such as ceramic coatings.

Tribological Coatings

Increased energy savings and productivity can be gained by surface modification research for tribological applications because a treated surface can be made harder and more durable than an untreated material. The approach used by the ECUT Tribology Program has been to develop theoretical models of how a cutting tool chemically dissolves into the workpiece and then to conduct experiments to validate the models. So far, the research has been extremely successful because surface modification of conventional high-speed tool steels has brought about wear-resistant surfaces that are 10 times harder than commercially available surface-modified cutting tools. Costs to manufacture such tools are expected to be only about 20 percent more expensive for a 10-fold increase in tool life.

Plans for FY 1987 call for developing even more advanced coatings that are 50 times harder than the most advanced cutting tools, again with a modest increase in cost. The potential application is for bearings, cutting tools, gears, and farm machinery. One of the reasons for the success of this research has been the consortium of two universities, a national laboratory, and a cost-shared industry team that will enable technology transfer into the marketplace to be readily effected.

Results gained from tribological surface modification research in FY 1986 laid the foundation for a transportation-related thrust in FY 1987. Surface modification techniques will apply the theoretical tools developed in the cutting tool research to the more technically difficult area of the piston ring-cylinder liner interface in heat engines. This is an area where generic research from one field (industrial cutting tools) can be used in another (transportation). Another success from this research is the development of advanced characterization techniques that enable the surfaces to be exactly tailored to meet a specific need.

Tribological Design Tools

Several workshops were sponsored by private sector groups and foreign governments during FY 1985 to develop agendas for tribology research. The Canadian government, which recently started a program in tribology modeled after the DOE/ECUT program, feels strongly that an information system that includes tribological data would be invaluable to designers of mechanical components and systems. Further reinforcement for such a computerized data retrieval system was given by the Industrial Research Institute, an organization of over 200 directors of major industrial research laboratories. Among the top three items in their research agenda was again a data retrieval system.

It is apparent that there is a Government role here to serve as the expediter of technology transfer. A low-level effort to develop a draft project plan began late in FY 1985 and continued into FY 1986. The plan was developed by bringing information specialist together with tribologists from Canada and West Germany (where efforts had already begun). FY 1987 plans call for completing a review by industrial members and

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gaining the financial support of the private sector, a whole host of professional societies (American Society of Mechanical Engineers, American Society of Lubrication Engineers, American Vacuum Society, America Ceramics Society, and many others) to cost share the development of a state-of-the-art computer system. Government sponsorship would last for 3 years after which time the system would be supported by the users.

An important design tool will be completed in FY 1987, a computer model that will assist U.S. engine designers in dealing with the problem of out-of-round cylinder bores. When the cylinder bore is not round, the piston rings cannot fit properly, and oil from the sump and combustion gases then mix. This problem contributes to the inability of the engine to reach theoretical efficiency. When the model is completed, it will become widely available for use in designing more efficient internal combustion engines.

International Research Monitoring $100,000

The FY 1987 request for International Research Monitoring is $100,000, a decrease of $40,000 from the FY 1986 appropriation.

The Multi-Sector Conservation Program is also responsible for evaluating and comparing the current status and projected directions of energy end-use and energy conversion technologies funded by foreign nations. This is an important responsibility. ECUT coordinates and integrates DOE foreign commitments through such mechanisms as the International Energy Agency (IEA) and bilateral activities for all of the Conservation Program. Results will aid considerably in guiding research in DOE Conservation efforts toward developing more fruitful and energy-efficient technologies that ensure future U.S. international competitiveness.

FY 1986 activities included the investigation of foreign technology resources apparent in Japan, West Germany, and Sweden. Specific technology information sources were identified, and abstracts were prepared and published in U.S. trade journals. After discussions with DOE Conservation program staff, priority research areas were identified, and the appropriate investigations were initiated. The FY 1987 program will continue with those investigations, albiet at a minimum level of effort.

Conservation Program Analysis and Planning $100,000

The Multi-Sector Conservation Program is taking on new responsibilities for the whole of the DOE Energy Conservation Program in FY 1987. The funding request is for $100,000. Responsibilities providing technical and administrative support for updating and revising the Five-Year Plan, assessing supercomputer needs, and recommending actions to ensure the availability of analytical instrumentation needed to conduct Conservation-related research. Finally, ECUT will provide oversight of research planned in various programs within the Office of Conservation. These funds and the work proposed will fill a gap in Energy Conservation Program coordination which has existed for several years.

In FY 1987 an assessment of the supercomputer needs for all the Conservation and Renewable Energy programs also will be conducted. As the sophistication of the research being carried out in a program increases, so too does the need for high-speed computations. Since one of the prime outputs of the ECUT program is experimentally validated predictive computer models, access to supercomputing capabilities is particularly acute in the ECUT program. Demand for supercomputer time is growing rapidly in the ECUT Combustion Technology, Materials-by-Design, Catalysis-by-Design, and Tribology Programs. However, other Conservation and Renewable Energy Programs, such as Solar Photovoltaics and Buildings and Community Systems, also have need for high-speed computers to simulate solar and building systems. The proposed assessment will identify and quantify to the extent possible the requirements which exist now for high-speed computing in all Conservation and Renewable Energy Programs and will project those needs into the future as the research in these programs progresses.

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Energy-Related Inventions

The mission of the Energy-Related Inventions Program (ERIP) is to evaluate energy-related inventions and new concepts offered by the public and to provide assistance to the most promising.

Recent ERIP accomplishments include:

- Developed a commercial-scale process to manufacture aluminum fuel cylinders reinforced with glass filaments for use as automobile fuel tanks. Aluminum Corporation of America (ALCOA) subsequently purchased the development and presently markets the cylinders.

- Developed a process to ship fruits and vegetables without refrigeration in a natural atmosphere which allows them to ripen naturally and extends their shelf life. The initial test item of "Tom-AH-toes" was well received and is now being shipped to a number of East Coast retailers, including Safeway in the Washington, D.C., area.

Energy-Related Inventions Program.....$3,300,000

The FY 1987 request for the Energy-Related Inventions Program (ERIP) is $3,300,000, a decrease of $1,353,000 from the FY 1986 appropriation.

ERIP, initiated under the Federal Non-Nuclear Research and Development Act of 1974, provides first for evaluation of inventions by the Office of Energy-Related Inventions (OERI) in the National Bureau of Standards (NBS) of the Department of Commerce (DOC) and then, assistance by the DOE Energy-Related Inventions Program for inventions identified by OERI as promising. The program gives particular attention to small businesses and individual inventors by assisting the NBS-recommended inventors in developing and/or commercializing their inventions. ERIP was established to evaluate the technical merits of energy-related inventions submitted by individual inventors and small businesses and to provide financial and technical assistance to the most promising ideas. Through FY 1985 the National Bureau of Standards (NBS) had evaluated approximately 22,000 energy-saving inventions. Based on NBS recommendations, 224 inventors have been awarded grants totaling $16,100,000. Of these 224, 36 are in the marketplace with sales to date totaling over $155,000,000, and over 1,000 jobs have been created.

In FY 1986 2,000 invention proposals were evaluated with 35 to 40 private sector inventions being approved for further development. A funding level of $3.3 million in FY 1987 will reduce the number of inventions evaluated and support for inventors as well as eliminate continued support for the Innovative Concepts Program formerly funded by the ECUT Program.

National Appropriate Technology Assistance Service

The mission of the National Appropriate Technology Assistance Service (NATAS) is to provide information and consultation assistance to the public requesting self-help in solving energy problems.

NATAS accomplishments over the past year include:

- Responded to 10,184 nationwide requests for tailored information and technical assistance pertaining to engineering and scientific aspects of appropriate technologies and 639 requests for assistance pertaining to business planning, patents, licensing, and obtaining private sector financing for energy-related inventions and businesses.

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National Appropriate Technology Assistance Service.....$750,000

The National Appropriate Technology Assistance Service (NATAS) FY 1987 Congressional request is $750,000, which is $646,000 less than the FY 1986 appropriation. This reflects a general, across-the-board reduction in NATAS activities.

The FY 1987 Congressional request provides for the continuation of some of the services provided by NATAS. NATAS currently provides tailored information responses and engineering, scientific, or technical aid to anyone in the United States who needs to know more about those technologies that lend themselves to self-help and provide solutions to individual energy problems. These "appropriate" technologies usually rely on sun, wind, and water resources and energy and natural resource conservation methods and devices.

The program is most beneficial to small businesses, farmers, homeowners, State and local governments, and nonprofit organizations. NATAS is working closely with existing Federal, State and local programs coordinating technical assistant activities.

In addition, NATAS provides commercialization assistance, i.e., business planning, development and financial analysis, to inventors and entrepreneurs who are attempting to develop and market products utilizing renewable energy sources or designed to conserve energy.

Capital Equipment $100,000

The FY 1987 request for plant and capital equipment is $100,000, a reduction of $830,000 from the FY 1986 appropriation. Funds will be used to continue limited upgrading of outmoded equipment and the acquisition of new state-of-the-art equipment for the ECUT Program at the DOE national laboratories and at Historically Black Colleges and Universities (HBCU's) conducting ECUT research.

Program Direction $500,000

Funding of $500,000 in FY 1987 will provide for 8 full-time equivalents (FTE's) to manage the research described above for the ECUT program, a reduction of 1 FTE from FY 1986.

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
KEY ACTIVITY SUMMARY

MULTI-SECTOR
ENERGY CONVERSION AND UTILIZATION TECHNOLOGIES

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Combustion	$4,380 Engine Combustion Technology .....$3,445 o Examine turbulence and bulk fluid motion by use of in-cylinder laser velocimetry. Emphasis is on pre-combustion swirl and its effect on engine performance. SNL, Princeton, MIT, LANL, S-Cubed o Apply laser diagnostics to an operating engine to examine temperature and turbulence relative to knock limitations of current engine designs. LLNL, SNL, MIT o Initiate research to study heat transfer processes in internal combustion engine environments. Research results can be used to improve efficiency by 3%.	$4,975 Engine Combustion Technology .....$4,075 o Continue in-cylinder laser velocimetry studies of precombustion bulk fluid motion ("swirl" and "squish"). Specific swirl ports and cup-in-piston geometries will be examined as related to development of DISC engines. LANL, SNL, Princeton, S-Cubed o Continue the study of the chemical processes of engine knock and include research on the effects of fluid mechanics and other physical processes occurring before, during, and after the knock event. Continue computer model development. LLNL, SNL, MIT o Conduct in-cylinder research on convection and conduction heat transfer processes. Couple with radiation investigation to develop integrated experiments	$4,080 Engine Combustion Technology .....$4,000 o Continue a series of carefully controlled experiments on fuel injection flow dynamics and make definitive comparisons with multi-dimensional computer simulations of precombustion, in-cylinder processes. o Combine multi-defined, simplified engine experiments, flow studies, and realistic engine tests to validate a comprehensive kinetic computer model for engine knock with simple fuels. Information gained may lead to an environmentally safe substitute for tetraethyl lead or to more effective blending strategies to interrupt or delay engine knock. o Continue heat transfer research to understand more completely the in-cylinder convection and conduction processes and to develop a more comprehensive multi-dimensional computer

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MULTI-SECTOR
ENERGY CONVERSION AND UTILIZATION TECHNOLOGIES

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Combustion	Emphasis is on diesel engine environment. Purdue, SAIC	and an analytical model. This work will incorporate the combined impact of all three heat transfer processes on the performance and reliability of advanced engines such as the adiabatic or the open chamber diesel concept. Purdue, Integral Technologies, SAIC	model. Research will also include aspects of the impact of heat transfer on engine "knock."
	o Perform combustion bomb tests on selected diesel fuel samples for comparison of their characteristics with performance of a base stock oil. SNL	o Complete preliminary research to characterize the impact of fuel additives on candidate alternative fuels for diesel engines. Recommend strategies for classification of fuel in place of current cetane ratings. SNL	o No activity.
	o Research is focused on understanding the role of droplet spray evolution relative to emissions formation in diesel engines. SNL, Princeton, Purdue	o Perform NO_x/particulate trade-off studies of operating diesel engine for engine design optimization of emission characteristics SNL, Princeton, Purdue	o Continue with additional NO_x/ particulate studies for diesel engines. Use combustion bomb experiments to study the effects of the pressure and temperature of fuel sprays on combustion and emissions formation.
	Continuous Combustion.....$935	Continuous Combustion.....$900	Continuous Combustion.....$800
	o Develop a computer model of spray dynamics. Devise experimental approach to validate model. JPL, SNL, NBS, LANL	o Investigate the effect of fluid mechanics on spray combustion. Extend non-dilute spray computer model to multi-component fuels.	o Begin experiments on turbulent combustion. Initiate studies on the effect on the combustion processes of the physical and chemical charac-

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Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Combustion		including conosphere formation & combustion. The processes of injection, vaporization, mixing, and combustion affect both system performance and pollutant emissions. This research focuses on improving the understanding of spray atomization and the temperature, pressure, oxygen mass formation, and flow velocities experienced by the liquid fuel. Current information is inadequate for combustor designers' present and future needs. NBS, SNL, LANL, JPL	teristics of the fuel. Continue to investigate the effect of fluid mechanics on spray combustion. Develop multi-component fuel spray model for use by combustor designers.
	o Continue research to establish a data base on microemulsion fuels. Employ small-angle neutron scattering in study of microemulsion fuel systems. Develop computer model. ORNL	o Continue the development of the microemulsion fuels technology data base. Experimentally validate the computer model of microemulsion fuel systems. The technology data base will be suitable for use by fuel and additive developers, enabling them to tailor alternative fuels for specific applications. ORNL	o Terminate activity.
	o Measure fluid dynamics and chemical processes of pulse combustion to determine the effect of	o Determine the effects of such operating parameters as fuel-air ratio, mass flow rates, temper-	o Continue to investigate the basic principle of pulse combustion for gas and solid as well as liquid fuel sy-

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MULTI-SECTOR
ENERGY CONVERSION AND UTILIZATION TECHNOLOGIES

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Combustion	mixing chamber configurations. Initiate development of a linearized computer model of a combustor. SNL	erature, and pressure on performance and emissions characteristics of pulse combustion. Initiate work on both liquid and solid fueled systems. Develop a one-dimensional, non-linear computer model of a pulse combustor. Compare the predictions of this model with experimental data to identify further required refinements. SNL o Begin experiments on a liquid-fueled Rijke-type pulse combustor. Use viewing windows to observe and photograph the combustion processes. Ga. Tech.	stems. Research will focus on combustion and heat transfer processes and their interacting effects. o Continue follow-up of the Rijke pulse combustor addressing more fundamental problems, such as the effect of pulsation on spray formation, pulsation combustion, and heat transfer processes.
Thermal Sciences	$1,048 Advanced Heat Transfer.....$410 o Conduct initial research on anomalies between theory and actual regenerator performance data. PNL o Complete flow-induced vibration experiments using water. ANL	$1,191 Advanced Heat Transfer.....$500 o Complete initial research on anomalies between theory and actual regenerator performance data. PNL o Develop computer code for design of heat exchanger without fluid elastic instabilities. ANL	$200 Advanced Heat Transfer.....$0 o Terminate activity. o Terminate activity.

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MULTI-SECTOR
ENERGY CONVERSION AND UTILIZATION TECHNOLOGIES

Key Activity	Actual Activities During FY 1986	Estimated Activities During FY 1986	Planned Activities During FY 1987
Thermal Sciences	o Continue initial research on technical feasibility of direct contact heat exchangers. Aerojet	o Complete initial research on direct contact heat exchanger concepts (to include research on a direct contact concept, the Rangue-Hilsch effect, to develop a high-temperature core coupled with fine particle counterflow to enhance heat transfer). Aerojet	o Terminate activity.
	Advanced Conversion Technology $638	Advanced Conversion Technology $691	Advanced Conversion Technology $200
	o Conduct research to develop advanced analysis techniques and to generate process knowledge of the thermodynamics, heat, and mass transfer in advanced cycles, including direct conversion devices and closed-cycle devices. PNL, ANL	o Continue fluid dynamics, thermodynamics, and heat transfer research using Reversing Flow Test Facility (RFTF). ANL	o Completed studies at RFTF. Incorporate experimental results into Stirling Engine Analysis Module and Optimization routine.
	o Investigate new and innovative concept to effect isothermal compression process for power cycles. University of Dayton	o Continue development of isothermal compressor concept for power cycles. University of Dayton	o Complete research on isothermal compressor concept for power cycles using carryover FY 1986 funds.
		o Initiate direct conversion technology research to advance current state-of-the-art. JPL	o Terminate activity.

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FY 1987 CONGRESSIONAL BUDGET REQUEST
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MULTI-SECTOR
ENERGY CONVERSION AND UTILIZATION TECHNOLOGIES

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Materials	$4,832	$5,713	$5,400
	High-Temperature Materials...$3,000	High-Temperature Materials...$3,386	High-Temperature Materials...$3,800
	o Initiate experimental investigation of mechanisms which result in increased temperature stability in nickel aluminide. ($1,000) ORNL, U. of TN, NCSU, RPI, Columbia U.	o Continue investigation of mechanisms of increased temperature stability in nickel aluminide and initiate research on problems of weldability and hot formability ($1,129) ORNL, U. of TN, NCSU, RPI, Columbia U.	o Continue research on mechanisms of increased temperature stability in nickel aluminide and on the problems of weldability and hot forming. ($1,000)
	o Begin research to make ductile other members of the intermetallic family having potential for high-temperature stability (e.g., iron aluminides). ($2,000) ORNL, Lehigh U.	o Make ductile other members of the intermetallic family having potential for high-temperature stability (e.g., iron aluminides). ($1,250) ORNL, Lehigh U., Dartmouth U.	o Continue research to make ductile other members of the intermetallic family. ($1,200)
	o Initiate experiments using radio frequency radiation to join ceramic materials, both with and without added brazing materials. ($500) ORR, ORNL, VPI & SU, LBL	o Continue use of radio frequency radiation to join ceramic materials, both with and without brazing materials. ($500) ORR ORNL, VPI & SU, LBL	o Continue experiments on use of radio frequency radiation to join ceramic/ceramic components. ($500)
	o Continue mathematical modeling of ceramic joint interfacial stresses in five basic geometries. ($500) Norton, ORNL	o Initiate experimental verification of finite element mathematical models depicting the stresses in ceramic joints. ($567)	o Continue experimental verification of finite element computer models of stresses in ceramic joints. ($700)

DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
KEY ACTIVITY SUMMARY

MULTI-SECTOR
ENERGY CONVERSION AND UTILIZATION TECHNOLOGIES

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Materials		Norton, ORNL, Ga Tech, Univ Energy Sys, Northwestern U.	• Initiate research on surface modification of ceramic materials as a means of toughening their surfaces. ($200)
	Materials by Design.....$1,000 • Initiate research to correlate the bonding and structure of selected materials by use of experimental and theoretical computational tools. This is an effort to design desired properties into materials through use of knowledge of their atomic structure and bonding. ($1,000) LANL, ORNL, VPI & SU	Materials by Design.....$1,396 • Continue research on correlating the bonding and structure of selected materials by use of experimental and theoretical computational tools with the objective of designing desired properties into materials through use of knowledge of their atomic structure and bonding. ($1,000) LANL, ORNL, VPI & SU • Initiate studies of bonding in metal clusters as a model for nickel aluminides in order to be able to predict the micro-alloying technique to use to make any given intermetallic compound ductile. ($396) U. of Florida, Carnegie-Mellon U., Univ of London, LANL	Materials by Design.....$1,000 • Continue research on correlating the bonding and structure of selected materials using both experimental and computational tools. ($1,000) • Continue studies of bonding in metal clusters. This is done to be able to predict the micro-alloying technique to use to make an intermetallic compound ductile. ($500)

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
KEY ACTIVITY SUMMARY

MULTI-SECTOR
ENERGY CONVERSION AND UTILIZATION TECHNOLOGIES

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Materials			o Initiate design of a new liquid crystal polymer material of desired strength and rigidity through use of knowledge of molecular structure, cross-linking, and bond strength. ($300)
	Lightweight Materials.....$500 o Initiate experiments on depolymerizing automobile plastic scrap to monomers. ($500) Plastics Institute of America (PIA), Brooklyn Poly, GRM,	Lightweight Materials.....$800 o Continue experiments selected from competitive solicitation on depolymerization of automobile plastic scrap for possible re-forming and reuse. ($500) PIA, Brooklyn Poly, GRM, o Initiate investigations on use of the heat of polymerization reactions to save energy in the molding process (reactive polymer processing). ($300) Pitt, SERI	Lightweight Materials.....$0 o Terminate activity. o Terminate activity.
	Corrosion-Resistant Materials .....$332 o Initiate experiments to develop new, corrosion-resistant magnesium alloys. ($332) Battelle-Columbus	Corrosion-Resistant Materials .....$131 o Stretch out experiments to develop new, corrosion-resistant magnesium alloys. ($131) Battelle-Columbus	Corrosion-Resistant Materials .....$0 o Terminate activity.

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KEY ACTIVITY SUMMARY

MULTI-SECTOR
ENERGY CONVERSION AND UTILIZATION TECHNOLOGIES

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Catalysis/ Biocatalysis	$2,000	$2,652	$2,400
	Bioprocess Engineering.....$1,900	Bioprocessing Engineering.....$2,578	Bioprocess Engineering.....$2,400
	o Continue research on stabilization of genetic information in recombinant micro-organisms. ($100) Cal Tech	o Continue genetic information stabilization research. ($200) Cal Tech, JPL	o Complete research on stabilization of genetic information in recombinant micro-organisms/ ($200)
	o Award contracts from RFP and initiate research on novel bioreactor concepts. ($1,700) Battelle, Celanese, Cornell, U. of Colorado, U. Cal. Berkeley, ORNL, Chem Systems	o Conduct research on novel bioreactor concepts, which may make it economically feasible to produce chemicals such as butanol with a biocatalyzed process. ($2,260) Battelle, Celanese, Cornell, U. of Colorado, U. Cal. Berkeley, ORNL, Chem Systems.	o Continue research contracts for novel bioreactor concepts. ($2,200)
		o Initiate planning for direct use of enzymes, which could eliminate the energy used to maintain the metabolic processes of living organisms in biochemical production processes. ($118) MIT	o Terminate activity.
	Catalysis-by-Design.....$100	Catalysis-by-Design.....$74	Catalysis-by-Design.....$0
	o Initiate research planning on Catalysis-by-design. Begin	o Continue research on catalysis-by-design through experimental	o Terminate activity.

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MULTI-SECTOR
ENERGY CONVERSION AND UTILIZATION TECHNOLOGIES

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Catalysis/ Biocatalysis	to develop force field model for an enzyme. ($100) Cal Tech, LANL	characterization and theoretical mathematical modeling of biocatalytic systems. ($74) Cal Tech.	
	Biologically Effected Separation/ Beneficiation.....$100 o Initiate program planning. Conduct assessment of state-of-the-art of bioseparation/beneficiation technology. ($100) INEL	Biologically Effected Separation/ Beneficiation.....$0 o Terminate activity.	Biologically Effected Separation/ Beneficiation.....$0 o No activity.
Tribology	$7,675 Lubricants.....$900 o Synthesize several analogs of base stock oil at National Bureau of Standards, and test for lubricating and oxidation resistance at low temperatures (up to 200°C). ($300) o Initiate research at National Bureau of Standards on solid lubricants for high-temperature greater than (600°C) environments. ($200)	$3,670 Lubricants.....$1,100 o Use model compounds to determine the exact parameters that control lubricity. ($350) o Continue research at the National Bureau of Standards on high-temperature solid lubricants and include U.S. Air Force research on high-temperature liquid lubricants. ($350)	$2,400 Lubricants.....$950 o Validate mathematical model that correlates molecular structure with lubricant qualities. ($100) o Continue research on high-temperature lubricants. Coordinate work with DARPA, DOE/Transportation Systems, and NASA programs. ($200)

DEPARTMENT OF ENERGY
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KEY ACTIVITY SUMMARY

MULTI-SECTOR
ENERGY CONVERSION AND UTILIZATION TECHNOLOGIES

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Tribology	o Conduct research at National Bureau of Standards on lubricants for warm forming of metals (200^{o} - 600^{o}). Information from this temperature regime is also applicable to adiabatic diesel engines. ($200)	o Continue research on lubricants for warm forming of metals. ($150)	o Complete research on lubricants for warm forming of metals. ($100)
	o Begin research on novel lubricant delivery techniques, such as research on deposition from the gas phase conducted by Pennsylvania State University. ($100)	o Continue research at Pennsylvania State University on lubricants delivered from the gas phase. ($80)	o Conduct research on additional novel lubricant delivery techniques, such as combinations of delivery methods. ($100)
	o Begin development of analytical techniques and instrumentation that will advance the state-of-the-art in understanding how lubricants lubricate at low, intermediate, and high temperatures. ($100)	o Continue development of advanced analytical lubricant measurement techniques. ($170)	o Continue development of advanced analytical lubricant measurement techniques. ($50)
	Mechanisms of Friction and Wear.....$800	Mechanisms of Friction and Wear.....$500	Mechanisms of Friction and Wear.....$250
	o Expand characterization of ceramics wear at Oak Ridge National Laboratory to understand and explain mechanisms of friction and wear of monolithics ceramics. ($500)	o Conduct friction and wear studies at Oak Ridge National Laboratory of monolithic ceramic composites above 600^{o}C. Share results with DARPA, DOE/Transportation Systems, and NASA. ($200)	o Complete study of ceramic composites at temperatures up to 600^{o}C. ($250)

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
KEY ACTIVITY SUMMARY

MULTI-SECTOR
ENERGY CONVERSION AND UTILIZATION TECHNOLOGIES

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Tribology	o Continue development of theory of wear of ceramics at Geogia Institute of Technology. ($100)	o Complete research at Georgia Tech on mechanisms of wear. ($100)	o No activity.
	o Continue X-ray and surface wear studies at Brookhaven National Laboratory National Synchrotron Light Source. ($100)	o Complete first phase of X-ray and surface wear studies at Brookhaven National Laboratory National Synchrotron Light Source. ($100)	o Terminate research.
	o Continue development at Oak Ridge National Laboratory of thermomechanical model to explain friction and wear properties. ($100)	o Complete thermomechanical model development at Oak Ridge National Laboratory. ($100)	o No activity.
	Friction and Wear Testing.....$200	Friction and Wear Testing.....$500	Friction and Wear Testing.....$500
	o Begin coordinated research with American Society for Testing and Materials, Society of Automotive Engineers, and other professional organizations on applicability of adapting metal friction and wear testing techniques to ceramics. ($150)	o Develop one standardized friction and wear tests for approval by American Society for Testing and Materials. ($200)	o Gain agreement from American Society for Testing and Materials on standardized friction and wear testing. ($100)
		o Initiate development of tests specific to ceramics at National Bureau of Standards. ($100)	o Develop methodology for approved by ASTM for friction and wear tests that advance the state-of-the-art for ceramics and ceramic coatings. ($400)
	o Initiate assessment and conduct	o Complete assessment by National	o No activity.

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KEY ACTIVITY SUMMARY

MULTI-SECTOR
ENERGY CONVERSION AND UTILIZATION TECHNOLOGIES

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Tribology	workshop on possibility of developing standardized ceramic wear test devices. ($50)	Bureau of Standards and Oak Ridge National Laboratory of ceramic wear test devices. ($200)	
	Tribological Surface Modifications and Coatings.....$700	Tribological Surface Modifications and Coatings.....$1,200 ($1,200 to new BA, $ 237 in new BA to be deferred)	Tribological Surface Modifications and Coatings.....$800
	o Initiate experiments to determine thermochemical criteria for tailoring wear-resistant coatings for selected substrates, such as high-speed steels. Contractors include a quartet of researchers: Argonne National Laboratory, Massachusetts Institute of Technology, University of California at Los Angeles, and Borg-Warner (cost-shared). ($400)	o Expand FY 1985 efforts with quartet on experiments to develop advanced tribological coatings for application in transportation, metalworking, and agricultural machinery. Begin mathematical model development. ($1,100)	o Continue experiments to develop well-characterized tribological surface modification techniques. Complete mathematical modeling to explain how cutting tool steels chemically dissolve under use. This effort will provide the framework for surface modification research applicable to both metalworking and transportation sectors. ($700)
	o Initiate research at Lawrence Livermore Laboratory on anti-abrasion, wear-resistant coatings that have potential application to ceramic turbine blades, brake-linings, and fluidized bed combustors. ($100)	o Continue research at Lawrence Livermore Laboratory on anti-abrasion, wear-resistant coatings. ($100)	o Complete research at Lawrence Livermore Laboratory on anti-abrasion, wear-resistant coatings. ($100)

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DEPARTMENT OF ENERGY
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KEY ACTIVITY SUMMARY

MULTI-SECTOR
ENERGY CONVERSION AND UTILIZATION TECHNOLOGIES

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Tribology	Tribological Design Tools.....$100 o Initiate planning for a tribological data retrieval system cost-shared with the American Society of Mechanical Engineers. ($100)	Tribological Design Tools.....$300 o Develop long-range feasibility, cost, and implementation plan for a computerized state-of-the-art tribological data retrieval system. Obtain cost-sharing agreements with industry and professional societies. (This reduces Government cost and automatically enhances technology transfer). ($150) o Initiate development by Compu-Tec Engineering, Inc., of a computer model that describes the frictional behavior of piston-rings in distorted cylinder bores. ($150) ($85 in new BA, $65 in carryover)	Tribological Design Tools.....$300 o Continue implementation of data retrieval system project plan as approved by industrial co-sponsors. ($300) o Complete computer model that describes frictional behavior of piston rings, and transfer to the private sector, using carryover of $25,000 from FY 1986. ($0)
	Tribological Energy Losses.....$125 o Complete quantification of major energy losses in the U.S. economy due to friction and wear. These studies were conducted by Pacific Northwest Laboratory, Technology Assessment and Transfer, DOE.	Tribological Energy Losses....$0 o No activity.	Tribological Energy Losses.....$0 o No activity.

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FY 1987 CONGRESSIONAL BUDGET REQUEST
KEY ACTIVITY SUMMARY

MULTI-SECTOR
ENERGY CONVERSION AND UTILIZATION TECHNOLOGIES

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
	Technology Consultants, and Other Sciences. ($200)		
International Research Monitoring	$0 o No activity.	$142 o Initiate investigation by Pacific Northwest Laboratory of foreign conservation technology research in Japan, West Germany, and Sweden. ($140)	$100 o Continue limited investigation of foreign conservation technology research. ($100)
Conservation Program Analysis and Planning	$0 o No activity.	$0 o No activity.	$100 o Conduct analyses and review of conservation program and update Conservation 5-year plan. ($160)
Innovative Concepts	$414 o Conduct program on innovative industrial processes. ($414)	$300 o In cooperation with the Inventor's Program, conduct competitive solicitation on innovative energy conservation devices. ($300 in unobligated carryover)	$0 o Program supported by Inventors program. ($0)
Capital Equipment	$1,646 o Update instrumented equipment at DOE national laboratories, and provide equipment to HBCU's. ($1,646)	$952 o Continue upgrading of equipment at national laboratories, and provide equipment to HBCU's. Including 20K in prior year funds.	$100 o Continue limited upgrading of equipment. ($100)
Program Direction	$225 o Provide funding for 6 FTE's for ECUT. ($225)	$540 o Provide funding for 9 FTE's for ECUT. ($510 in new BA, $ 30 in carryover, $109 to carryover to be deferred)	$500 o Provide funding for 9 FTE's for ECUT. ($500)

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
KEY ACTIVITY SUMMARY

MULTI-SECTOR
ENERGY-RELATED INVENTIONS PROGRAM

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Energy-Related Inventions Program (ERIP)	$4,300 National Bureau of Standards .....$1,800 o Evaluate 1400 invention proposals. o Conduct 6 National Innovation Workshops. DOE o Provide support for 33 inventors. ($1,934) o Conduct program evaluation, planning, and support tasks. ($514) Innovative Concepts Program o Program conducted by ECUT.	$5,600 National Bureau of Standards .....$1,800 o Evaluate 2000 invention proposals. o Conduct 6 National Innovation Workshops. DOE o Provide support for 34 inventors. ($2,090) ($2,031 in new BA, $ 539 in carryover) $ 64 in carryover to be deferred) o Conduct program evaluation, planning, and support tasks. ($700) Innovative Concepts Program o Conduct competitive solicitation in innovative energy conversion devices for the handicapped and elderly. ($210)	$3,300 National Bureau of Standards .....$1,400 o Evaluate 1000 invention proposals. o Conduct 4 National Innovation Workshops. DOE o Provide support for a maximum of 22 inventors. ($1,300) o Conduct program evaluation, planning, and support tasks. ($600) Innovative Concepts Program o Complete FY 1986 efforts with unexpended balances.

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
KEY ACTIVITY SUMMARY

MULTI-SECTOR
NATIONAL APPROPRIATE TECHNOLOGY AND ASSISTANCE SERVICE

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
National Appropriate Technology Assistance Service (NATAS)	$1,755	($952 in new BA, $222 in carryover, $476 in new BA to be deferred) $1,174	$750
	o Responded to 10,184 requests for tailored information and technical assistance pertaining to engineering and scientific aspects of appropriate technologies. These requests came from all 50 States, the District of Columbia, and the Territories.	o Respond to 8,500 requests for technical assistance pertaining to appropriate technologies.	o Respond to 6,000 requests for technical assistance pertaining to appropriate technologies.
	o Responded to 639 requests for assistance pertaining to business planning, patents, and licensing and obtaining private sector financing for energy related inventions and businesses.	o Respond to 500 requests for assistance pertaining to energy related inventions and businesses.	o Respond to 200 requests for assistance pertaining to energy related businesses.
	o Initiated an independent evaluation of NATAS to assess the effectiveness and benefit of the program and to identify ways to improve NATAS.	o Complete the NATAS evaluation and implement changes as appropriate in response to findings.	
		o Develop 4-6 energy fact sheets/ briefs for response to frequently asked questions.	

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MISSION AND OBJECTIVES OF STATE AND LOCAL ASSISTANCE PROGRAMS

The goal of the State and Local Assistance Programs is to encourage energy conservation initiatives on the State and local level through a mix of activities and programs, including direct financial assistance, personalized information services, technical assistance, and developmental demonstration projects to enhance State and private sector involvement in energy conservation. The Office of State and Local Assistance Programs administers the following programs in support of its goal:

- the Weatherization Assistance Program;
- the Schools and Hospitals Grants Program, also known as the Institutional Conservation Program;
- the Energy Policy and Conservation Act (EPCA) Grants, also known as the State Energy Conservation Program (SECP); and
- the Energy Extension Service.

The first two programs were established to provide assistance to sectors of the economy which experience particular difficulty in dealing with rising energy costs. The Weatherization Assistance Program increases the energy efficiency of residences occupied by low-income citizens across the country, particularly the homes of the elderly and the handicapped. The Schools and Hospitals Grants Program provides matching grants to non-profit institutions. The EPCA Grants and the Energy Extension Service were established to provide funding to the States and Territories for a variety of comprehensive energy conservation activities, and to build a capacity within and among the States and territories to plan, develop, and carry out their own energy conservation and outreach programs.

These programs have accomplished a great deal. Over 1.5 million low-income homes have been weatherized. Over 19,000 grants have been awarded to schools and hospitals, funding energy conservation projects in some 53,000 institutional buildings. Comprehensive energy conservation programs and information outreach programs are in place in 57 States and Territories, and through these millions of people have been aided in using energy more efficiently.

The FY 1987 budget request provides for the orderly closeout of these programs. Responsibility for providing these services most apropriately resides with the states. It is expected that funds will be made available to the states through the settlement of petroleum pricing violation cases, and these funds will help finance weatherization and other energy-related activities.

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Department of Energy
FY 1987 CONGRESSIONAL BUDGET REQUEST
LEAD TABLE
ENERGY CONSERVATION
State and Local Assistance Programs

Operating Expenses
(Tabular dollars in thousands. Narrative materials in whole dollars)

	FY 1985 Appropriation	FY 1986 Request	FY 1987 Base	FY 1987 Request	Request vs. Base
State & Local					
Weatherization	$191,113	$177,970	$177,970	$ ---	$-177,970
Schools & Hospitals	47,043	43,874	43,874	---	-43,874
EPCA Grants	23,522	17,499	17,499	---	-17,499
Energy Extension Service	9,801	7,297	7,297	---	-7,297
Program Evaluation	1,960	---	---	---	---
Program Direction	9,961	9,525	9,525	5,000	-4,525
Territories Assitance	---	465	465	---	-465
Total, SLAP	$283,400	$256,630	$256,630	$5,000	$-251,630
Staffing					
Total FTE's	178	180		100	-80 FTE

Authorizations:

National Energy Extension Service Act, Title V, P.L. 95-39;
Energy Policy and Conservation Grant Program (Energy Policy and Conservation Act, P.L. 94-163);
Energy Conservation and Production Grant Program (Energy Conservation and Production Act, P.L. 95-385);
Schools and Hospitals Grant Program (National Energy Conservation Policy Act, Sec. 301-304, P.L. 95-619);
Other Local Government Buildings Grant Program (National Energy Conservation Policy Act, Sec. 310-312, P.L. 95-619;
Weatherization Assistance Program Energy Conservation and Production Act, Sec. 411, P.L. 94-385);
Department of Energy Organization Act, P.L. 95-91;
P.L. 93-577, The Federal Non-nuclear Energy Research and Development Act of 1974
P.L. 95-91, Section 301, Department of Energy Organization Act

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Department of Energy

FY 1987 Congressional Budget Request

Adjustments to FY 1985 Appropriations

	FY 1986 Conference	General Reduction	Management Initiatives	Pay Cost Restoration	Gramm-Rudman-Hollings Reduction	Adj. Approp. Total
State and Local						
Weatherization	$191,200	$-1,120	$-4,114	$ ---	$ -7,996	$177,970
School & Hospitals	47,134	-275	-1,014	---	-1,971	43,874
EPCA Grant	18,818	-129	-404	---	-786	17,499
Energy Extension Service	7,841	-47	-169	---	-328	7,297
Territories Assistance	500	-3	-11	---	-21	465
Program Direction	8,494	-51	-220	1,730	-428	9,525
Subtotal, State and Local	$273,987	$-1,625	$-5,932	$ 1,730	$-11,530	$256,630
General Reduction:						
Operating Expenses	-1,625	1,625	---	---	---	---
Management Initiatives:						
Operating Expenses	-5,932	---	5,932	---	---	---
Pay Restoration	1,730	---	---	-1,730	---	---
Total, State and Local	$268,160	$ ---	$ ---	$ ---	$-11,530	$256,630
Operating Expenses	268,160	---	---	---	-11,530	256,630
Capital Equipment						

Department of Energy

FY 1987 Congressional Budget Request

Adjustments to FY 1987 Appropriations

	FY 1986 Conference	General Reduction	Management Initiatives	Gramm-Rudman-Hollings Reduction	Approp. Total
Facilities					
Facilities	$ 10,319	$ -57	$ -222	$ -432	$ 9,608
General Reduction: Construction	-57	+57	---	---	---
Management Initiatives: Construction	-222	---	222	---	---
Total, Facilities	$ 10,040	$ ---	$ ---	$ ---	$ 9,608
Construction	$ 10,040	$ ---	$ ---	$ -432	$ 9,608

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Department of Energy
FY 1987 CONGRESSIONAL BUDGET REQUEST

SUMMARY OF CHANGES
(In thousands of dollars)

State and Local Assistance Programs

FY 1986 Budget Request	$ 256,630
Program Increases and Decreases	
Weatherization Assistance Program - Close out of grant funding	$-177,970
Schools and Hospitals - Close out of grant funding	$ -43,874
EPCA Grants - Close out of grant funding	$ -17,499
Energy Extension Service - Close out of grant funding	$ -7,297
Territories Assistance - Close out of grant funding	$ -465
Program Direction - Supports 80 less FTE	$ -4,525
FY 1987 Budget Request	$ 5,000

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ACCOMPLISHMENTS OF THE WEATHERIZATION ASSISTANCE PROGRAM

The Low-Income Weatherization Assistance Program increases the energy efficiency of residences occupied by low-income persons across the country, particularly the homes of the elderly and the handicapped. Since 1977, the program has weatherized over 1.5 million homes with an average home heating energy saving of 13% per home. Most recent specific accomplishments of the program are as follows:

o Revised the program rule to provide increased flexibility to States to develop energy audits and select the most cost effective weatherization techniques. The rule widens the range of weatherization materials which can be considered, and updates standards for them.

o Issued a rental unit weatherization policy to increase weatherization of such dwellings, especially in multi-family buildings.

o Implemented innovative financing projects in four states to demonstrate methods that can be used to increase private sector involvement in weatherizing multi-family structures. In Minnesota, the state is assisting a private landlord in securing the services of a commercial energy services firm. In Pennsylvania, the local community action agency is designing a loan interest reduction plan to accomplish energy conservation retrofit on a building. In New York, the local community action agency is establishing a separate operation as a not-for-profit energy services company to provide services to low-income multi-family buildings. In Michigan, the City of Ann Arbor is acting as a shared savings company, financing building projects from a revolving fund repaid by the savings from the energy conservation retrofits.

o Completed a national evaluation of the energy savings achieved in weatherized homes. As mentioned above, the evaluation shows an average home heating energy savings of 13% in those homes, with 23% of weatherized homes increasing energy use after weatherization.

o Implemented a comprehensive monitoring program to improve the overall quality of workmanship.

o Initiated comprehensive program evaluation activities to measure all impacts of the program.

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ACCOMPLISHMENTS OF THE SCHOOLS AND HOSPITALS PROGRAM

The Schools and Hospitals Grants Program, also known as the Institutional Conservation Program (ICP), was established to encourage energy conservation in the institutional buildings sector. Such public and private non-profit institutions use significant amounts of energy, the cost of which represents a large proportion of their operating budgets. As a result, energy conservation measures can result in significant energy and economic savings. Most recent specific accomplishments of the program are as follows:

* From 1980-85, awarded 19,000 grants for energy conservation projects in over 53,000 buildings.

* Energy savings accumulating from ICP-funded projects are estimated to total 50 trillion BTU's per year.

* Energy costs for participating institutions have been reduced: $.54 for schools and $.65 for hospitals annually for every $1.00 invested by the federal government.

* A program data base which contains substantive energy-related data on institutional buildings (size, energy consumption rate, type of building).

* Developed an "Institutional Manager's Guide to Energy Conservation" which has been distributed to institutions, institutional organizations, state energy offices and DOE field offices.

* Developed, with the National Society of Professional Engineers, an " Institutional Managers Guide to Technical Assistance Analysis."

* Through a grant to the American Hospital Association, studied uses of alternate financing and developed guidelines for hospitals.

* Initiated a project to study use of and develop guidelines for alternate financing within communities so that such contracts might be used by the local government, public schools and colleges and universities within the same community.

* Participated in conferences, annual conventions and with energy committees of national professional associations and societies to multiply program efficiency and impact.

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- Initiated in late 1984 a strategy development process to identify ways of compounding the impact of the ICP grant program by systematically incorporating more non-federal resources and expertise in institutional energy efficiency. Developed during 1985, through a process of broad-based research, analysis, coordination, and consultation, a strategy which addresses the three most important energy-related needs of institutions, (financing, expertise, and information) as identified during the course of interviews and focus group meetings. The strategy was approved by the Assistant Secretary for Conservation and Renewable Energy during September, 1985.

- ICP and several States are working on a variety of initiatives to encourage institutions which have applied for, but not received, ICP grants, to seek alternative, innovative sources of funding for energy efficiency improvements.

The following are examples of what grantees have accomplished with funds provided by ICP:

- ICP funds have supplemented Ohio State University's energy conservation efforts, which save the university approximately $5.5 million per year. University officials believe that without their energy conservation program tuition costs for each student would be about $100 per year higher. ICP has funded projects in 15 campus buildings since 1980.

- A Nevada high school installed the second of three evaporative coolers. The energy-efficient system, which saved over $28,000 in energy costs during its first year of operation, received a Special Award in the Department of Energy's 1985 technology-transfer competition, and was funded in part by an ICP grant.

- ICP funds have supplemented the Washington, D.C., Children's Hospital energy conservation efforts through the installation of pneumatic controls which are projected to save the hospital more than $100,000 per year.

- Cooper Green Hospital in Birmingham, Alabama, issued an ICP grant as seed money to leverage an additional $377,000 of private financing which, combined, saved 2-3 times the energy ICP dollars alone could have achieved.

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ACCOMPLISHMENTS OF THE STATE ENERGY CONSERVATION PROGRAM

The State Energy Conservation Program (SECP) was created in 1977 to provide financial assistance to states for the purpose of supporting state and local conservation projects. The legislation authorizing the SECP requires that States carry out programs in five areas:

1. Mandatory lighting efficiency standards for public buildings (except public buildings owned or leased by the United States).

2. Programs to promote the availability and use of carpools, vanpools, a public transportation (except that no Federal funds provided under this part shall be used for subsidizing fares for public transportation).

3. Mandatory standards and policies relating to energy efficiency to govern the procurement practices of a state and its political subdivisions.

4. Mandatory thermal efficiency standards and insulation requirements for new and renovated buildings (except buildings owned or leased by the United States).

5. A traffic law or regulation which, to the maximum extent practicable consistent with safety, permits the operator of a motor vehicle to turn such vehicle right at a stop light after stopping.

o The South Dakota Housing Development Authority recently adopted the state's first Energy Conservation Code, for new and existing housing. The energy saving rules were developed by the South Dakota Energy Office.

o The state of Alaska has made available through the State Energy Conservation Program (SECP), 75 Energy Tellers which are used to measure, in dollars, the electrical consumption of plug-in type appliances or other electrical devices for 120-volt AC devices. They are offering Energy Tellers to all electrical utilities in the state for their customers' use. Requests for 42 of the Tellers have been received from utilities.

o The Florida Energy Office assisted the legislature in its 1985 regular session by addressing energy conservation in three key bills. Passed during the session were: (1) One bill encourages state agencies to consider "shared savings financing" for energy conservation retrofits and maintenance services provided by private firms. The firms would own any purchased equipment for the duration of the contract, not to exceed 10 years, and would be recompensed out of the savings. (2) New legislation also requires a life-cycle cost analysis on high energy-use replacement equipment for buildings owned or leased by the state. In the past, such equipment as air conditioners, heaters, and water heaters were chosen on the basis of lowest bid. (3) Ridesharing is promoted by a bill that provides reserved parking spaces free for state employee car pools.

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o The North Dakota Office of Intergovernmental Assistance has established a computer program which analyzes costs and potential savings in street lighting systems for smaller communities. The program is contained on three diskettes designed to run an IBM-PC. It determines current operating costs, computes potential costs, savings of converting to high pressure sodium lights, and computes potential savings from reducing the hours of operation.

o The District of Columbia Energy Office sponsored a series of energy conservation workshops under the auspices of the SECP which focused on a variety of different sectors within the city. Workshops have been conducted for operations of the Blue Plains Wastewater Treatment Plant and for building design professionals (architects and engineers). Additional workshops include training sessions for owners, operations, and managers of commercial office buildings and an advanced course for building design professionals.

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ACCOMPLISHMENTS OF THE ENERGY EXTENSION SERVICE

The Energy Extension Service (EES) was established to connect energy users - such as homeowners, tenants, landlords, small business and local governments with practical conservation and renewable resources options available to them. The EES was modeled after the highly successful Agricultural Cooperative Extension Service. Grants are given to States to implement EES programs and to deliver services to their energy users. States are given broad flexibility in designing programs to meet their particular needs. The service as established will provide the national infrastructure for the transfer of new technologies as they become available. Examples of types of programs that States are running are:

o The Youth Energy Conservation Corps (YECC) is a program element of the West Virginia Energy Extension Service. The goals of the program are: (1) to elicit an increased response rate to the Residential Conservation Service energy audit program and (2) provide youths with part-time employment to develop job skills. The West Virginia 4-H program was selected as the organization to operate the program in cooperation with the West Virginia University Center for Extension and Continuing Education. During the first program year, 1,219 audits were conducted by 700 youths in seven counties. Ninety-five percent of the households participating had never previously participated in an energy audit. Fifty-nine percent initiated at least one of the recommended measures. Overall, 78 percent of all participating households felt the audit program useful and 65 percent felt that changes in their lifestyles were made as a result of the audit.

o The Alabama Energy Extension Office has developed the "Car Kit" which consists of eight Apple computer programs on three diskettes, five color video programs (for a total of 27 minutes) on 1/2" VHS cassetts tape, car owner's handbook and a teacher's guide. The Car Kits distributed free of charge to the first 100 schools in Alabama requesting them, will then be available for a nominal fee. Developed for driver education classes, libraries or general classroom use, the Car Kits can be used to teach students about computers while at the same time offering relevent material concering car operation, maintenance, and energy conservation. The Car Fitness Book is a reference guide to car maintenance and energy efficiency conveniently sized to fit the car's glove compartment. It provides practical information on driving techniques, car maintenance, and energy conservation. The transportation videos consist of a series of five videos on one 1/2" VHS tape. They deal with safe driving practices, car care, and saving energy. The transportation conservation microcomputer software consists of a series of eight programs on three disks.

o Massachusetts Energy Office Energy Extension Service has recently begun the second phase of its Energy Employment Training Program. This program's goal is to increase employment opportunities for low-income, urban, and minority heads of household through employment training in an energy-related industry. A grantee of the State Energy Office in the city of Boston is currently recruiting eligible individuals to train as entry-level heating, ventilation, and air conditioning technicians. Once recruited, the individuals will be trained and placed in appropriate jobs. It is the hopes of the Massachusetts Energy Office that once this phase of the program is completed, the Energy Employment Training Program will be replicated in another part of Massachusetts.

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Department of Energy
FY 1987 CONGRESSIONAL BUDGET REQUEST
State and Local Assistance Programs

NARRATIVE JUSTIFICATION

The goal of the State and Local Assistance Program is to encourage energy conservation initiatives at the State and local level through a mix of activities and programs, including direct financial assistance, technical assistance, and developmental/demonstration projects to enhance State/private sector involvement in energy conservation. In FY 1987, program efforts will be directed toward the orderly close-out of the State Energy Conservation (EPCA), Energy Extension Service, Schools and Hospitals and Weatherization Assistance Programs. Responsibility for providing these services most appropriately resides with the States. It is expected that funds will be made available to the States through settlement of petroleum pricing violation cases, and these funds will help finance weatherization and other energy-related activities.

Weatherization	FY 1985	FY 1986	Congressional Request FY 1987
	$191,113,000	$177,970,000	-0-

The FY 1987 Budget request provides no funding for Weatherization. This represents a $177.9 million decrease from FY 1986.

The Weatherization Assistance Program increases the energy efficiency of residences occupied by low-income citizens across the country, particularly the homes of the elderly and the handicapped.

It is estimated that approximately 14.4 million households at or below 125% of poverty are eligible to receive assistance under this program. Low-income households are least able to respond effectively to the market signal of higher prices by making energy conservation investments. As of December, 1985, approximately 1.5 million low-income homes were weatherized under this program.

Because over half of the eligible population lives in rental and multifamily units, increased emphasis has been placed on weatherizing these dwellings. To assist in increasing the impact on the low-income multifamily building sector, several innovative financing demonstrations have been undertaken to explore options available to State and local program operators, landlords, and private sector financial institutions.

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Also, the program has taken the initiative in identifying and developing alternative approaches to providing weatherization services to the low-income. During the last half of FY 85 and through FY 86, the program is:

- promoting quality workmanship at the local level through quality control systems established by the States;
- ensuring program efficiency through site monitoring visits;
- conducting program evaluation activities to determine the best approaches to maximizing weatherization resources;
- conducting national and regional conferences to share program information, state-of-the-art weatherization techniques and management strategies; and
- developing and implementing a program to provide program opportunity grants to States and local agencies to promote energy related business development activities by local agencies.

Amendments to the program regulations have given the States more flexibility and responsibility in operating their respective programs. This will allow the State and local agencies to respond best to local needs.

In FY 1986, the program will examine what services should be provided and how best to provide those services given limited Federal funding. This examination will result in the development of a multi-year strategy aimed at broadening and diversifying the weatherization resource base in order to accomplish program goals.

In FY 1987, DOE will continue limited work with States and local agencies to encourage innovative financing of low-income weatherization activities, while closing down the financial assistance aspects of the program.

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Schools & Hospitals	FY 1985	FY 1986	Congressional Request FY 1987
	$47,043,000	$43,874,000	-0-

The FY 1987 budget request provides no funding for the Schools and Hospitals Grant Program. This represents a $43.8 million decrease from FY 1986.

The Schools and Hospitals Grant Program was established to encourage energy conservation initiatives in the institutional building sector. Such public and private non-profit institutions use significant amounts of energy, the cost of which represents a large proportion of their operating budgets. As a result, energy conservation measures can result in significant energy and economic savings.

Through FY 1985, the program awarded 19,000 grants for energy conservation projects in over 53,000 school and hospital buildings. The program has also had notable secondary effects in stimulating energy-saving activities and developing expertise in energy conservation in participating institutions.

The program has taken the initiative in identifying and developing alternative approaches to promoting energy conservation in the institutional building sector. During 1985, through a process of broad-based research, analysis, coordination and consultation, a multi-year program strategy was developed to address the three most important energy-related needs of institutions, (financing, expertise, and information) as identified during the course of interviews and focus group sessions. In FY 1986, the program will implement its multi-year strategy to:

- continue demonstrating various alternative energy conservation financing methods to increase private sector support of energy conservation in institutions;

- conduct enhanced information development networking activities and demonstration projects in partnership with national associations, state and local governments, and other Federal programs which will focus on providing products and services such as energy management and financing case studies, data on successful energy efficiency programs and projects, and to provide data and referrals to assist institutions with energy management and financing concerns.

Also, as part of it's strategy implementation, ICP will use a portion of the appropriation for developmental grants to provide seed money for states to assist their non-profit institutions to access alternative sources of financing energy conservation and share energy management information and expertise.

In FY 1987, DOE will continue limited work with States to encourage innovative financing of priority projects and to share energy management information and expertise with institutions while closing down the financial assistance aspects of the program.

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EPCA Grants	FY 1985	FY 1986	Congressional Request FY 1987
	$23,522,000	$17,499,000	-0-

The FY 1987 budget request does not provide funding for the EPCA grants. This represents an $17.4 million reduction from FY 1986.

SECP has provided states with the means to plan, establish and implement energy conservation programs that reduce energy consumption in each state. Fifty states and seven territories have developed energy efficiency plans, and are implementing and evaluating specific programs.

SECP has supported the states in the development of conservation and renewable resources activities that address the specific energy issues of each state. The states have also developed and are maintaining an energy emergency planning and response network, a database of information on energy use and energy conservation efforts statewide, and state-wide "networks" of organizations involved in energy activities.

In FY 1985 DOE focused on ways to help the states increase their involvement in the planning and financing of their energy programs. In FY 1986, DOE will work extensively with states to increase their program planning, evaluation, and financing skills, and to seek out and encourage private sector investment in energy efficiency activities.

In FY 1987 DOE staff will continue to work in a limited fashion with the states providing training and technical assistance. However, no financial support will be provided to enable the states to develop and implement plans for obtaining increased private sector funding, since the grants aspect of the program terminates this year.

Energy Extension Service	FY 1985	FY 1986	Congressional Request FY 1987
	$9,801,000	$7,297,000	-0-

The FY 1987 budget request provides no funding for the Energy Extension Service (EES). This represents a $7.3 million reduction from FY 1986.

Through the States EES has provided tailored information, and technical assistance to small scale energy users (i.e small businesses, local governments and homeowners) to help them decide what are their most effective and productive energy conservation and renewable energy options.

The demonstration of commercially available technologies/techniques, hands-on workshops, on-site technical assistance and "how-to" workbooks are the principal methods utilized by EES to meet the needs of the energy consumer. EES has functioned as an integrating and coordinating mechanism for existing resources and delivery mechanisms, providing them with new/updated information and backing them with sound technical advice. EES has also provided a referral service to assist energy consumers.

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In FY 1985, DOE focused on ways to help the states increase their involvement in the planning and financing of their energy programs. In FY 1986, DOE will work extensively with states to increase their program planning, evaluation, and financing skills, and to encourage private sector investment in energy efficiency activities, as well as the networking of technical resources to support their programs.

In FY 1987 DOE will continue to work, in a limited fashion, with the states providing training and technical assistance. However, no financial support will be provided to states to develop and implement plans on obtaining increased private sector involvement, since the grants aspect of the program terminates this year.

Territories Assistance	FY 1985	FY 1986	Congressional Request FY 1987
	$ -0-	$465,000	$ -0-

The FY 1987 budget request provides no funding for Territories Assistance. This represents a $465,000 decrease from FY 1986.

In FY 1986, DOE will provide small grants to the Territories to aid them in developing their idigenous energy resources, as an alternative to conventional energy sources which must be imported to the islands.

There are no funds requested for this activity in FY 1987.

Program Direction	FY 1985	FY 1986	Congressional Request FY 1987
	$9,961,000	$9,525,000	$5,000,000

The FY 1987 budget request for Program Direction is $5 million, a reduction of $4.5 million from FY 1986.

The staffing level for program direction in FY 1987 is 100 FTE. This FTE request will support personnel in headquarters and in DOE's field offices to provide for orderly closeout of the financial aspects of these programs.

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Department of Energy
FY 1987 CONGRESSIONAL BUDGET REQUEST
($ in 000's)
State and Local Assistance Programs
Key Activity Summary

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Weatherization Assistance Program	Activities included client education, improvement of quality control procedures, determining best approaches to weatherizing mobile homes, and follow-on evaluation work. Continued efforts to develop innovative financing approaches and business development opportunities for local action agencies. Weatherized 186,000 dwelling units. ($192,661)	Continue program support activities. Develop series of "lessons learned" to transfer successful program operation strategies to program grantees. Issue program opportunity grants to State and local agencies to promote energy-related business development activities by local agencies. Develop multi-year strategy to optimize program delivery given limited Federal funds. Increase support for innovative financing initiative. Continue quality control and client education activities. Weatherize 183,000 homes. Total obligational authority of $186,699 reflects $182,084 in new BA, $4,615 in prior year funds and deferral of $137 in prior year funds. ($186,699)	Termination of federal grants. Continue limited assistance to States & Local agencies to encourage innovative financing of low-income weatherization activities. (-0-)

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Department of Energy
FY 1987 CONGRESSIONAL BUDGET REQUEST
($ in 000's)
State and Local Assistance Programs
Key Activity Summary

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Schools and Hospitals	Initiated work with constituent organizations to build multi-year program strategy consensus to encourage energy conservation activity and investment in institutions by non-Federal entities. Implemented pilot project to combine unfunded grant applications to attract third party financing. Initiated efforts to improve the quality of technical assistance services procured by grantees. Provided information for institutional managers on proper operations and maintenance techniques. Awarded 1658 grants, covering 4,481 buildings. ($51,004)	Continue activities begun in FY 1985. Use a portion of appropriation for developmental grants to grants to states to assist non-profit institutions to gain access to alternative information, expertise, and financing sources for energy conservation projects. Prepare case studies based on these activities to assist States in planning similar activities. Award 1454 grants covering 3635 buildings. Total obligational authority of $59,172 reflects $44,888 in new BA and $14,284 in prior year funds. ($59,172)	Termination of Federal grants. Continue limited assistance to institutions in accessing alternate sources of information, expertise and funding. (-0-)
EPCA Grants	Continued to provide matching grants to 50 States, D.C. and 6 territories	Continue to provide grants to 50 States, D.C. and 6 territories to continue	Termination of Federal grants. Limited assistance to states

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Department of Energy
FY 1987 CONGRESSIONAL BUDGET REQUEST
($ in 000's)
State and Local Assistance Programs
Key Activity Summary

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
EPCA Grants (Con't)	to maintain energy emergency planning response capability, an infrastructure for implementing national energy policies and initiatives, and state-wide network of organizations involved in energy activities. Increased emphasis on continued improved program evaluation and information exchange with States. ($23,786)	their best energy efficiency programs. Work with states to increase program planning, evaluation, and financing skills. Total obligational authority $18,121 includes $17,903 in new BA and $218 in prior year funds for EPCA grants. A total of $430 in prior year ECPA grants funds are proposed for deferral. ($18,121)	to identify alternate sources of funding. ($-0-)
Energy Extension Service	Continued matching grants to 50 States, D.C. and 6 territories to continue offering assistance to small-scale energy users. ($9,689)	Continue to provide grants to 50 States, D.C. and 6 territories to continue their best energy efficiency outreach programs. Work with states to increase program planning, evaluation and financing and skills. Total obligational authority of $7,622 includes $7,466 in new BA and $156 in prior year funds. ($7,622)	Termination of Federal grants Limited program assistance to states to provide alternate sources of funding. (-0-)

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Department of Energy
FY 1987 CONGRESSIONAL BUDGET REQUEST
($ in 000's)
State and Local Assistance Programs
Key Activity Summary

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Territories Assistance	No activity	Initiate provision of small grants to the Territories to aid them in developing their indigenous energy resources. ($476)	No activity
Program Evaluation	Implemented evaluation activities in the weatherization (WAP) and schools & hospitals (ICP) programs. In WAP studies were begun to assess the impacts of client behavior on energy savings, to identify the most cost-effective measures and to assess the efficiency of program operations. In ICP, a national evaluation was initiated to determine the program's impact on fostering energy efficiency and saving energy and to identify the factors which lead to successful institutional conservation programs. ($1,105)	Continue activities began in FY 1985. ($855)	Complete activities begun in FY 1985. (funds made available from unexpended balances)

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Department of Energy
FY 1987 CONGRESSIONAL BUDGET REQUEST
($ in 000's)
State and Local Assistance Program
Key Activity Summary

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Program Direction	Provide salaries and expenses for 178 FTE at headquarters & field offices. Monitor & evaluate programs. Carry out cross-program technical assistance activities. ($8,976)	Provide salaries and expenses for 180 FTE at headquarters and field offices. Evaluate programs. Decrease monitoring. Includes $9,745 in new budget authority, $133 in prior year funds and $1,383 in prior year funds proposed for deferral. ($9,878)	Provide salaries and expenses for 100 FTE at headquarters & DOE field offices, to close out grants under these programs. ($5,000)

DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
LEAD TABLE
POLICY AND MANAGEMENT
Energy Conservation - Operating Expenses
(Tabular dollars in thousands. Narrative material in whole dollars.)

	FY 1985 Approp.	FY 1986 Adj. Approp.	FY 1987 Base	FY 1987 Request	Request vs. Base
Energy Conservation					
Policy and Management Operating Expenses	$ 1,747	$ 1,687	$ 1,687	$ 1,792	+105
Total Policy and Management	$ 1,747	$ 1,687	$ 1,687	$ 1,792	+105
Staffing Total FTEs	28	21	21	17	- 4

Authorization: Section 209 P.L. 95-91, "Department of Energy Organization Act."

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Department of Energy

FY 1987 Congressional Budget Request

Adjustments to FY 1986 Appropriations

	FY 1986 Conference	General Reduction	Management Initiatives	Pay Cost Restoration	Gramm-Rudman-Hollings Reduction	Adj. Approp. Total
Policy & Management - CE (EC)						
Policy & Management	$ 1,300	$ -8	$ -39	$ 510	$ -76	$1,687
General Reduction	-8	+8	---	---	---	---
Management Initiatives	-39	---	39	---	---	---
Pay Restoration	+510			-510	---	---
Total, Policy & Management	$ 1,763	$ ---	$ ---	$ ---	$ -76	$1,687

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
SUMMARY OF CHANGES
POLICY AND MANAGEMENT
(In Thousands of Dollars)

FY 1986 Adjusted Appropriation	$1,687
Increased level of support	+105
FY 1987 Congressional Request	$1,792

Policy and Management.....$1,792,000

The Policy and Management FY 1987 Congressional Request is $1,792,000 and 17 full time equivalent staff years of effort which provides for overall management guidance to Conservation and Renewable Energy (CE) programs. Staffing levels provide the executive and overall program direction for all CE programs to ensure effective management. These activities include executive management, policy formulation, program review and approval, and liaison with senior officials in DOE, White House, Congressional, OMB, other Departmental Agencies, private industry, and State and local governments. In addition, the staff will carry out analyses of the CE programs needed to assess performance and effectiveness.

The FY 1987 request also provides for a minimal level of support for functions such as planning, policy development and analysis, program planning and evaluation, budget preparation and execution, program and personnel management and administrative support. Activities performed include development of planning guidance, analysis of program options for achieving planned objectives, evaluation of performance against program objectives, handling and/or coordination of program/budget submissions and execution of approved budgets and ongoing support functions in the areas of: administrative services, procurement, personnel, space management and related support services including a comprehensive program review function. In addition, funds are included for the continuation of a procurement tracking system and an automated support system which provides text processing, electronic mail, data base management, communication and other program applications.

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DEPARTMENT OF ENERGY

FISCAL YEAR 1987 CONGRESSIONAL BUDGET REQUEST

STRATEGIC PETROLEUM RESERVE

VOLUME 7

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DEPARTMENT OF ENERGY

Proposed Appropriation Language

Strategic Petroleum Reserve

[For expenses necessary to carry out the provisions of sections 151 through 166 of the Energy Policy and Conservation Act of 1975 (Public Law 94-163), $113,043,000 to remain available until expended.] (Department of the Interior and Related Agencies Appropriations Act, 1986, as included in Public Law 99-190.)

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DEPARTMENT OF ENERGY

Proposed Appropriation Language

[SPR Petroleum Account]

[Notwithstanding any other provision of law, the Secretary of Agriculture, at the request of the Secretary of Energy, may exchange agricultural products owned by the Commodity Credit Corporation for crude oil to be delivered to the Strategic Petroleum Reserve: Provided, That the Secretary of Energy shall approve the quantity, quality, delivery method, scheduling market value and other aspects of the exchange of such agricultural products: Provided further, That if the volume of agricultural products to be exchanged has a value in excess of the market value of the crude oil acquired by such exchange, then the Secretary of Agriculture shall require as part of the terms and conditions of the exchange that the party or entity providing such crude oil shall agree to purchase, within six months following the exchange, current crop commodities or value-added food products from United States producers or processors in an amount equal to at least one-half the difference between the value of the commodities received in exchange and the market value of the crude oil acquired for the Strategic Petroleum Reserve.] (Department of the Interior and Related Agencies Appropriations Act, 1986, as included in Public Law 99-190.)

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DEPARTMENT OF ENERGY

FISCAL YEAR 1987 CONGRESSIONAL BUDGET REQUEST

SUMMARY OF ESTIMATES BY APPROPRIATION BY MAJOR ACTIVITY

STRATEGIC PETROLEUM RESERVE

(Budget Authority in Thousands of Dollars)

	FY 1985 Actual	FY 1986 Estimate	FY 1987 Request
Strategic Petroleum Reserve	$2,307,857	$ 378,217	$ 149,966
Less Use of Prior Year Balances	-258,307	-270,684	-149,966
Total, Strategic Petroleum Reserve .	$2,049,550	$ 107,533	$ ---

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
AMOUNTS AVAILABLE FOR OBLIGATION
STRATEGIC PETROLEUM RESERVE
(In thousands of dollars)

	FY 1986	FY 1987
Appropriation, Strategic Petroleum Reserve	$ 107,533 [1/]	$ ---
Appropriation, SPR Petroleum Account	---	---
Subtotal, Budget Authority	$ 107,533	$ ---
Unobligated Balances, Start of Year	1,004,165	747,576 [2/]
Unobligated Balances, End of Year	- 747,576 [2/]	- 597,632
Total, Obligations	$ 364,122	$ 149,944

1/ Net of proposed sequestration.

2/ Does not include $27,949,000 of FY 1986 receipts from SPR test sale.

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
STRATEGIC PETROLEUM RESERVE
SUMMARY OF RESOURCES AND OBLIGATION PLANS
FY 1986 AND FY 1987
(dollars in thousands)

	Unobligated Balances 10/1/85	FY 1986 Appropriation	Use of Prior Year Balances	Total Available Resources	Planned Obligations FY 1986	Unobligated Balances 10/1/86	Proposed Reprogramming for FY 1987	Subtotal	Planned Obligations FY 1987	Unobligated Balances 10/1/87
Strategic Petroleum Reserve Account										
Storage Facilities Development and Operations										
Phase I	$ 916	$ ---	$- 916	$ ---	$ ---	$ ---	$ ---	$ ---	$ ---	$ ---
Phase II	19,405	---	- 9,965	9,440	9,440	---	---	---	---	---
Phase III	231,209	156,414	- 226,508	161,195	4,504	156,691	-156,691	---	---	---
Non-Phase Specific	38,498	206,140 2/	- 10,186	226,452 4/	187,104	39,268	+145,300	184,568	139,521	48,047
Subtotal	$ 290,108	$ 362,564	$- 255,575	$ 397,087	$ 201,128	$ 195,959	$- 11,391	$ 184,568	$ 139,521	$ 48,047
Management	4,014	15,863 3/	- 2,145	17,532	15,500	2,032	+ 11,391	13,423	13,423	---
Petroleum Acquisition and Transportation	12,964	---	- 12,964	---	---	---	---	---	---	---
Total Strategic Petroleum Reserve Account	$ 307,086	$ 378,217	$- 270,684	$ 414,619	$ 216,628	$ 197,991	$ ---	$ 197,991	$ 148,944	$ 48,047
SPR Petroleum Account 1/	697,079	---	---	697,079	147,496	549,583	---	549,583	---	549,583
Total SPR Program	$1,004,165	$ 378,217	$- 270,684	$1,111,698	$ 364,122	$ 747,574	$ ---	$ 747,574	$ 148,944	$ 597,630

1/ Amounts exclude $27,949,000 received in FY 1986 from the SPR test sale. Upon deposit in the SPR Petroleum Account these funds became available for obligation but will be deferred.

2/ Net of $4,225,000 proposed for sequester pursuant to the Balanced Budget and Emergency Deficit Control Act of 1985 (P.L. 99-177).

3/ Net of $607,000 proposed for sequester pursuant to the Balanced Budget and Emergency Deficit Control Act of 1985 (P.L. 99-177).

4/ Includes $50,000 proposed for set-aside in FY 1986 under Section 515 of the Treasury-Postal Service-General Government Appropriation Act, 1986, enacted by reference in the FY 1986 Continuing Appropriations Act (P.L. 99-190).

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
PROGRAM OVERVIEW

STRATEGIC PETROLEUM RESERVE

BACKGROUND

The Strategic Petroleum Reserve (SPR) was created by the Energy Policy and Conservation Act (P.L. 94-163), signed into law on December 22, 1975. The objective of the SPR program is to reduce the vulnerability of the United States to a severe petroleum supply disruption.

The SPR provides protection to the United States from oil supply disruptions by supplementing oil supplies, mitigating the upward pressure on world prices and thus reducing the potential loss in economic output. It can also provide time and flexibility to the President in attempting to resolve an oil supply disruption.

Developments in 1985 regarding the SPR program include the following:

(1) On January 9, 1985, the Congress approved a reprogramming, from Phase III to Non-Phase Specific, of $42,334,000 for a portion of the Distribution Enhancements proposed in the Department's October 1984 reprogramming request.

(2) On February 4, 1985, the FY 1986 Budget was presented to the Congress, providing for:

(a) An indefinite moratorium on SPR storage capacity development and oil fill at the end of FY 1985;

(b) Placing the SPR in a state of standby readiness for drawdown;

(c) Continuance of that portion of the Distribution Enhancements program approved by the Congress on January 9, 1985;

(d) Deferral from FY 1985 to FY 1986 of $270,738,000 and $827,028,000, respectively, of funds already appropriated for the Strategic Petroleum Reserve Account and the SPR Petroleum Account; and

(e) All Facilities Development and Operations funding to be classified as Non-Phase Specific after FY 1985.

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(3) On February 14, 1985, the Director of the Office of Management and Budget (OMB) requested that the Department submit a transition plan by April 30, 1985, to place the SPR in a state of standby readiness. The plan was submitted to OMB on April 29, 1985, and subsequently also to the Congress on May 23, 1985.

(4) On July 2, 1985, the Energy Policy and Conservation Amendments Act of 1985 (P.L. 99-58) was enacted, extending SPR program authorities to June 30, 1989. This legislation also established a requirement for a test drawdown and distribution of SPR oil through the sale or exchange of approximately 1.1 million barrels (MMB) of crude oil in storage at the Reserve. It also established the requirement for this test to commence within 180 days of the enactment date unless the President determined that implementation of the SPR Distribution Plan was required because of a severe energy supply interruption, or because of obligations of the United States under the International Energy Program.

(5) On August 15, 1985, the President signed the FY 1985 Supplemental Appropriations Act, (P.L. 99-88) containing the following provisions regarding the SPR:

(a) Restored all deferred Strategic Petroleum Reserve Account funds and $290,070,000 of the deferred SPR Petroleum Account funds;

(b) Directs the continued development of facilities for a 750 MMB system during FY 1986; and

(c) Requires that the SPR oil inventory be increased to 500 MMB by the end of FY 1986.

House Report 99-142 accompanying this Act added a requirement for a report to the Congress on the alternatives and recommendations for increasing the distribution capability of the SPR above 4 MMB per day for a completed 750 MMB storage program.

(6) On September 30, 1985, the inventory of crude oil in storage at the SPR reached 489.3 MMB, representing a daily average fill rate of 159 thousand barrels during FY 1985.

(7) On November 18, 1985, the test sale of SPR oil required by the Energy Policy and Conservation Amendments Act of 1985 commenced with the issuance of a Notice of Sale to seventy-two potential offerors. Seventeen offers for a total of 7.17 MMB were received on November 25, 1985 and, during the week of December 2, 1985, five contracts for a total of 1.0 MMB of sweet and sour crudes were awarded at an average price of approximately $28.88 per barrel. Deliveries under these contracts commenced on December 11, 1985 and were completed in mid-January 1986. Total deliveries amounted to 966,809 barrels at an average price of approximately $28.91.

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(6) On December 19, 1985, the President signed the FY 1986 Continuing Appropriations Act (P.L. 99-190) which provided approximately $112.4 million in new budget authority for the SPR in FY 1986 for activities necessary to continue with development of a 750 MMB system. Additionally, the Act permits the Secretary of Energy to exchange surplus U. S. Government-owned agricultural commodities for crude oil to fill the Reserve.

Proposed FY 1987 Budget

The FY 1987 budget proposes an indefinite moratorium on the further development of the SPR, effective at the end of calendar year 1985. Oil fill will continue in FY 1986 until the SPR inventory reaches a level of 500 MMB less SPR test sale deliveries, as required by current law. The Administration will propose the elimination of the legislative requirement concerning further SPR fill and linkages to Naval Petroleum Reserve production and sales. No fill is planned in FY 1987.

During the last nine months of FY 1986, activity at SPR development sites will focus primarily on completing ongoing construction and on the performance of tasks necessary to accomplish the transition of the sites to a standby mode, ready for drawdown or restart of development if changes in oil market conditions so warrant. In FY 1987, the focus will be on maintaining the sites in this standby-readiness mode. Work will continue in both FY 1986 and FY 1987 on distribution enhancements that are necessary to permit the drawdown and distribution of the SPR inventory at a rate of approximately 3.1 million barrels per day.

There is no requirement for new budget authority in FY 1987 since unobligated balances of funds appropriated in prior years are sufficient to sustain activities essential for maintaining SPR facilities in a standby-readiness state. The proposed allocation of resources for this purpose is as follows:

(1) The unobligated balance of funds available in the Strategic Petroleum Reserve Account on October 1, 1985, including the balance in the account from the FY 1981 appropriation for Petroleum Acquisition and Transportation, and the funds appropriated to the account for FY 1986 will be treated in the following manner:

	($000)
Total funds available October 1, 1985	$ 307,086
FY 1986 appropriations	112,365
Proposed for sequester	- 4,832
Proposed Section 515 set-aside	- 50
Planned FY 1986 Obligations	- 216,628
Balance deferred for use after FY 1986	$ 197,941

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(2) To reflect the conversion to and maintenance of SPR facilities in a standby readiness condition after December 1985, Phase III funds that will not be obligated in FY 1986 are being proposed for reprogramming to the Non-Phase Specific and Management budget categories.

(3) Because of the moratorium on capacity development and completion of oil fill, Federal staffing requirements are reduced. Accordingly, it also is proposed that the staffing of the SPR be reduced from 178 full-time equivalents (FTE's) in FY 1985 to 152 FTE's in FY 1986, and to 120 FTE's in FY 1987.

(4) Funds in SPR Petroleum Account on October 1, 1985, and the proceeds deposited in the account from the SPR test sale will be treated as follows:

	($000)
Total funds available October 1, 1985	$ 697,079
Proceeds from test sale	27,949
Total available in FY 1986	$ 725,028
Planned obligations for 500 MMB fill	- 147,494
Balance deferred	$ 577,534

At present, the May 1985 Transition Plan for moving the SPR to a standby readiness condition by the end of FY 1985 is being revised to reflect changes in transition resource requirements that are a result of the resumption of facilities development following the August 15, 1985 enactment of the FY 1985 Supplemental. Upon completion of this effort, the need for adjustments to current estimates of FY 1986 and FY 1987 resource requirements will be considered as necessary.

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
SUMMARY OF ESTIMATES OF APPROPRIATIONS BY BUDGET ACTIVITY
STRATEGIC PETROLEUM RESERVE
(In thousands of dollars)

	FY 1985 Actual		FY 1986 Estimates 1/		FY 1987 Request	
	BA	BO	BA	BO	BA	BO
Strategic Petroleum Reserve Account						
Storage Facilities Development and Operations:						
Phase I	$ ---	$ 180	$ ---	$ 488	$ ---	$ 1,000
Phase II	46,399	44,877	---	27,230	---	8,030
Phase III	291,296	75,410	156,414	49,927	---	4,286
Non-Phase Specific	113,686	72,586	206,140 2/	156,922	136,521	208,569
Subtotal	441,380	193,053	362,554	233,567	136,521	221,738
Petroleum Acquisition and Transportation	---	---	---	---	---	---
Management 3/	17,810	19,414	15,413	17,004	13,423	15,348
Subtotal	459,190	212,467	378,217	250,571	149,944	237,086
Use of Prior Year Balances	---	---	- 270,684	---	- 149,944	---
Total Strategic Petroleum Reserve Account	$ 459,190 4/	$ 212,467	$ 107,533	$ 250,571	$ ---	$ 237,086
SPR Petroleum Account	2,049,550 3/	1,620,729	---	389,290	---	---
Total SPR Program	$2,508,740	$1,833,196	$ 107,533	$ 639,861	$ ---	$ 237,086

1/ New budget category in FY 1987; replaces Planning and Management Support and Program Direction.

2/ FY 1985 appropriation for Strategic Petroleum Reserve Account as enacted in the FY 1984 Second Supplemental.

3/ $536,950,000 deferred in FY 1985; $549,585,000 plus test sale receipts of $27,949,000 proposed for deferral in FY 1986.

4/ Net of $4,832,000 proposed for sequester pursuant to the Balanced Budget and Emergency Deficit Control Act of 1985 (P.L. 99-177).

5/ Includes $50,000 proposed for set-aside in FY 1986 under the Treasury-Postal Service-General Government Appropriations Act, 1986, enacted by reference to the FY 1986 Continuing Appropriations Act (P.L. 99-190).

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
LEAD TABLE
STRATEGIC PETROLEUM RESERVE
(Tabular dollars in thousands. Narrative material in whole dollars)

	FY 1985 Appropriation	FY 1986 4/ Appropriation	FY 1987 Base	FY 1987 Request	Request vs. Base
Strategic Petroleum Reserve Account					
Storage Facilities Development and Operations					
Phase I	$ ---	$ ---	$ ---	$ ---	$ ---
Phase II	46,399	---	---	---	---
Phase III	281,295	156,414	156,414	---	- 156,414
Non-phase Specific	113,606	206,140 5/	206,140	136,521	- 69,619
Subtotal	441,300	362,554	362,554	136,521	- 226,033
Petroleum Acquisition and Transportation	---	---	---	---	---
Management 1/	17,890	15,663	15,663	13,423	- 2,240
Subtotal	459,190	378,217	378,217	149,944	- 228,273
Use of Prior Year Balances	---	- 270,684	- 270,684	- 149,944	+ 120,740
Total Strategic Petroleum Reserve Account	$ 459,190 2/	$ 107,533	$ 107,533	$ ---	$- 107,533
SPR Petroleum Account	2,049,550 3/	---	---	---	---
Total SPR Program	$2,508,740	$ 107,533	$ 107,533	$ ---	$- 107,533
Staffing - Total FTE's	178	152	152	120	- 32

Authorization: Section 157-167, P.L. 94-163

1/ New budget category in FY 1987; replaces Planning and Management Support and Program Direction.
2/ FY 1985 Appropriation for Strategic Petroleum Reserve Account as enacted in the FY 1986 Second Supplemental.
3/ $536,950,000 deferred in FY 1985; $549,585,000 plus test sale receipts of $27,949,000 proposed for deferral in FY 1986.
4/ Adjustments to the FY 1986 Appropriation are shown in the table on the following page.
5/ Includes $50,000 proposed for set-aside in FY 1986 under the Treasury-Postal Service-General Government Appropriation Act, 1986 enacted by reference in the FY 1986 Continuing Appropriations Act (P.L. 99-190).

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Department of Energy

FY 1987 Congressional Budget Request

Adjustments to FY 1986 Appropriations

	FY 1986 Conference	General Reduction	G-R-H Reduction	Total
Strategic Petroleum Reserve (SPR)				
Planning and Management Support	$ 4,552	$ -8	$ -189	$ 4,355
Storage Facilities Development and Operations				
Phase I	--	--	-	-
Phase II	--	--	-	-
Phase III	156,691	-277	-	156,414
Non-Phase Specific	210,737	-372	-4,225	206,140
Program Direction	11,747	- 21	-418	11,308
Subtotal, SPR	$ 383,727	$-678	$-4,832	$ 378,217
General Reduction	-678	678	-	-
Use of Prior Year Balances (SPR)	-270,684	-	-	-270,684
Total, Strategic Petroleum Reserve	$ 112,365	-	$-4,832	$ 107,533
Operating	112,365	-	-4,832	107,533

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
SUMMARY OF CHANGES
STRATEGIC PETROLEUM RESERVE
(In thousands of dollars)

FY 1986 appropriation	$ 107,513
Storage Facilities Development and Operations	
o Phase III	
- Decrease due to Phase III construction being fully funded in prior years	- 156,414
o Non Phase Specific	
- Decrease due to transition of facilities to standby operations mode	- 18,891
- Decrease due to reduced requirements for Capital Improvements Program	- 676
- Decrease due to near completion in FY 1986 of moratorium program for Distribution Enhancements	- 50,052
Management	
o Personnel Compensation and Benefits	
- Increase due to restoration of proposed FY 1986 reduction in Federal salaries	+ 263
- Effect of moratorium of Federal staffing levels	- 881
o Travel	
- Effect of moratorium on staff travel	- 95
o Other Services	
- Decrease due to transfer of non-management support services funding to Non-Phase Specific	- 1,000
- Effect of moratorium on management support services requirements	- 527
Subtotal	$ 120,740
Use of prior year balances	- 120,740
FY 1987 budget request	$ ---

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(tabular dollars in thousands; narrative material in whole dollars)

	FY 1986 Obligations	FY 1987 Base	FY 1987 Request
STORAGE FACILITIES DEVELOPMENT AND OPERATIONS	$ 201,128	$ 362,554	$ 136,521

The FY 1987 Request for Storage Facilities Development and Operations represents a decrease of $64,607,000 from the FY 1986 obligations plan due to the proposed moratorium on facilities development, beginning in January 1986. For FY 1986, this moratorium policy is reflected in the proposed deferral of $195,909,000 of the funds appropriated for Storage Facilities Development and Operations.

Phase I

Phase I consists of five underground storage sites, the pipelines required to connect the storage sites to distribution facilities, and a Federally-owned marine oil terminal at St. James, Louisiana. The Phase I storage sites are Bryan Mound in Texas and Bayou Choctaw, West Hackberry, Sulphur Mines, and Weeks Island, all in Louisiana. Four of these sites had existing solution-mined (leached) caverns and the fifth, Weeks Island, was a conventional salt mine. Construction of Phase I facilities began in July 1977 and was completed in 1980. All five sites have been filled to their combined Phase I storage capacity of approximately 260 MMB. An unobligated balance of $916,000 in Phase I funds was reprogrammed to Non-Phase Specific in the FY 1986 Interior and Related Agencies Appropriations Act, which is included in the FY 1986 Continuing Appropriations Act (P.L. 99-190).

Phases II and III

Phase II is the ongoing expansion of three Phase I sites. These sites and the Phase II capacity that was planned for each are as follows:

Bryan Mound	120 MMB
West Hackberry	160 MMB
Bayou Choctaw	10 MMB
Total	290 MMB

Phase III planned capacity had been 200 MMB, consisting of the further expansion of existing sites by 60 MMB, including 40 MMB at Bryan Mound, 10 MMB at West Hackberry and 10 MMB at Bayou Choctaw, plus the addition of Big Hill with a capacity of 140 MMB.

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The FY 1986 Interior and Related Agencies Appropriations Act also provided for the reprogramming of $9,965,000 of Phase II funds and $70,094,000 of Phase III funds to Non-Phase Specific. These reprogrammings and the planned FY 1986 obligations in each of the Phases are reflected in the table below. As the table shows, $156,961,000 of the currently available Phase III funds will remain unobligated at the end of FY 1986 and, in view of the proposed moratorium on facilities development, these funds are being proposed for reprogramming to the Non-Phase Specific and Management budget categories in the amounts of $145,300,000 and $11,391,000, respectively.

	Phase II	Phase III
Unobligated Balance, October 1, 1985	$ 19,405	$ 231,289
FY 1986 Reprogramming	- 9,965	- 70,094
Planned FY 1986 Obligations	- 9,440	- 4,504
Balance for FY 1987 Reprogramming	$ 0	$ 156,691

The following sections describe the transition of the Phase II and Phase III sites. All sites will be in standby in FY 1987.

Bryan Mound

Leaching activities continued through December 1985, at which time the Phase II and Phase III leaching program for the site was approximately 95% completed. Surface construction at the site is complete, except for wetlands mitigation and the Physical Protection System, on which work will continue to completion in FY 1986.

West Hackberry

Leaching activities also continued at this site through December 1985, at which time Phase II leaching was approximately 89% completed and Phase III leaching (one cavern) about 13% completed. Work is in progress on the site Physical Protection System and will be completed in FY 1986.

Bayou Choctaw

Phase II capacity at this site consists of a single 10 MMB cavern (Cavern 17) acquired from a private sector firm in exchange for a smaller cavern (Cavern 102). Cavern 17, which was used to store ethane, has been certified for crude oil storage and the drilling and surface construction associated with preparing the cavern for SPR use has been initiated and will continue to completion in FY 1987. Phase III capacity also consists of a single cavern, the development of which has not proceeded beyond the drilling of cavern wells. Further effort on this cavern will be limited to completing ongoing design work.

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Big Hill

Drilling of the fourteen planned caverns at the site has been completed and Stage 1A surface construction and the raw water intake structure are approaching completion. Planned FY 1986 procurements of Stage 2 surface facilities, the raw water and brine pipelines and the crude oil pipeline have been suspended and site activity is currently directed toward closing down the site and leaving it in an environmentally acceptable condition.

At the end of December 1985, the SPR underground storage capacity was approximately 509.4 MMB, located in the following manner:

	(millions of barrels)
Bryan Mound	198.6
West Hackberry	165.8
Sulphur Mines	26.0
Bayou Choctaw	46.0
Weeks Island	73.0
Total	509.4

Non-Phase Specific

FY 1986 Obligations	FY 1987 Base	FY 1987 Request
$ 187,184	$ 206,140	$ 136,521

The Non-Phase Specific budget category was established in FY 1981 to fund facilities requirements not directly associated with specific development phases of the SPR. Beginning in FY 1986, all activity except phase specific construction-related activity will be funded from Non-Phase Specific.

The following table presents the obligations plan for Non-Phase Specific by major function:

	FY 1986	FY 1987 Request
Operations	$ 106,826	$ 103,960
Operations Support	8,497	9,634
Capital Improvements	19,209	18,512
Distribution Enhancements	52,652 1/	4,415
Total	$ 187,184	$ 136,521

1/ Includes $20,652 initially planned for obligation in FY 1985.

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Operations is a subcategory of funding that supports the following activities:

	(obligations)	
	FY 1986	FY 1987 Request
Operations and Maintenance - ongoing operations, maintenance, spare parts, O&M contractor fee, drawdown, and terminal contracts	$ 86,651	$ 86,621
Security - security guards and equipment.	9,643	10,109
Utilities - electrical power for all sites.	9,536	5,841
Environmental - ongoing environmental requirements for all sites.	996	1,389
Total Operations	$ 106,826	$ 103,960

Operations and Maintenance (O&M) activities in FY 1986 and FY 1987 will be primarily carried out by Boeing Petroleum Services, Inc. (BPS) under a Management, Operations and Maintenance contract which became effective in mid-FY 1985. The functions for which BPS is responsible are O&M management and support and actual operations (primarily operational tests and crude oil movements associated with preventive maintenance) and maintenance work at the SPR sites. Other O&M functions will consist of those performed under DOE direct contracts associated with building leases, FTS communications, and standby terminalling.

O&M activities for most of FY 1986 and all of FY 1987 will focus primarily on maintaining SPR sites in a standby readiness mode. Estimated funding requirements are essentially the same for each year, with cost escalation in FY 1987 being offset by reductions in spares inventories.

Funding for Security in FY 1987 provides for the continuance of a level of security commensurate with that in FY 1986. The increase of $466,000 in the FY 1987 obligations level primarily reflects assumed cost inflation.

Planned obligations for Utilities in FY 1986 include the electric power requirements for leaching new storage capacity during the first three months of the fiscal year. There will be no similar activity during FY 1987, thus requirements will essentially be limited to minimum contractual obligations.

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Environmental funding in FY 1986 and FY 1987 primarily covers activities necessary for compliance with applicable environmental codes, regulations and permitting requirements.

Operations Support provides for the following types of activity:

	FY 1986	FY 1987 Request
Continuing Engineering	$ 4,000	$ 4,260
Support Services	3,518	4,501
Special Projects	979	873
Total Operations Support	$ 8,497	$ 9,634

Continuing Engineering includes Systems, Geotechnical and Design Engineering effort.

The focus of Systems Engineering in the standby readiness mode is on the analysis and evaluation of drawdown readiness and drawdown test results, as well as analyses and evaluations related to implementation of emergency contingency plans, vulnerability analyses, quality assurance, and Reliability, Availability and Maintainability (RAM) activities consistent with DOE requirements.

The primary emphasis of the Geotechnical program is on salt characterization and creep studies; geological site and cavern characterization updates; and the application of models related to characterization of in situ oil mixing, cavern certification and recertification, cavern pressure-time histories, cavern creep data and drawdown exercises.

Design Engineering in the standby readiness scenario addresses the continuing need for feasibility studies, technical impact and cost-benefit analysis of proposed system changes, the development of standard specifications, and the preparation of conceptual designs and cost estimates for proposed projects.

Overall, the level of Continuing Engineering effort will not change significantly from FY 1986 to FY 1987.

The Support Services activity covers a broad range of support services across all areas of the SPR. Typical examples of the types of services provided are:

- o Implementing and monitoring management and technical controls to enhance project management;
- o Monitoring of other contractor activities to provide a single source of management information;
- o Support to operations activities in the areas of electric power distribution and analyses, integrated logistics, and RAM implementation (e.g. failure analyses);

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- o Support for specialized reproduction services; and
- o Support and training for Site Operations Model (SOM) and Site Availability Model (SAM).

The apparent 28% increase in FY 1987 request level obligations for these Support Services is due to the transfer of funding requirements for Systematic Management Services, Inc. (SMS) from the Management budget to Non-Phase Specific beginning in FY 1987. The decision to make this shift ($1 million) is based on the conclusion that the support services of SMS are not unique to the management function.

Special Projects funding covers activities that do not readily fit into the other Operations Support categories. In FY 1986 and FY 1987, these activities include Department of Defense contract administration services and the continuation of Sandia National Laboratories' work on an overall security systems plan. FY 1987 request level obligations reflect a reduced effort in both of these areas.

Capital Improvements addresses the need for modifications or additions to existing facilities to assure that mission objectives can continue to be met. Projects covered by this subcategory of funding are outside the scope of normal maintenance and usually require engineering design and analyses. Projects are identified as a result of operating experience and safety, hazard, reliability and vulnerability assessments and studies.

FY 1986 and FY 1987 obligations by activity are as follows:

	FY 1986	FY 1987 Request
Design/Engineering	$ 3,990	$ 3,304
Construction	12,582	12,484
Construction Management	2,637	2,724
Total Capital Improvements	$ 19,209	$ 18,512

The FY 1987 Capital Improvements construction program is planned to include the following major projects:

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Bryan Mound	
Deluge Fire Protection System	$ 4,700
Phase II Piping System Changes	900
Permanent Facilities Addition	771
Bayou Choctaw	
Control Room Integration	1,722
Permanent Facilities Addition	351
Weeks Island	
Permanent Facilities Addition	613
St. James	
Deluge Fire Protection System/Alarms	2,280
Permanent Facilities Addition	320
Subtotal	$ 11,657
All Other Projects	827
Total	$ 12,484

The deluge fire protection systems for Bryan Mound and St. James are two of six planned systems, three of which (West Hackberry, Bayou Choctaw and Sulphur Mines) were funded in FY 1985 under the SPR Transition Plan. The remaining system, i.e., Weeks Island, is currently planned to be funded in FY 1988.

The permanent facilities additions are to replace existing temporary office and warehouse facilities (trailers and temporary structures) which are overcrowded and do not meet DOE criteria for fire protection.

FY 1987 Design/Engineering work includes tasks related to warehouse facilities, roads, crash out gates and security enhancements.

Distribution Enhancements was introduced as a Non-Phase Specific funding subcategory in the FY 1986 budget to address major changes in the commercial crude oil distribution systems which have limited SPR distribution capability to 2.3 million barrels per day (B/D).

The current program for Distribution Enhancements provides for completion of the necessary Seaway Complex enhancements. However, plans for the Texoma Complex enhancements have been revised and new plans for Capline Complex enhancements have been added. The rationale for these changes is described below.

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Texoma Complex

The SPR Distribution Capability Analysis, completed in 1984, concluded that the Sun Terminal was internally constrained in its distribution of SPR crude. As such, distribution enhancements to the Sun Terminal were proposed to permit maximum simultaneous distribution to Sun docks and local pipelines. However, subsequent detailed engineering studies of the Sun Terminal and revised analyses of expected local refinery demand for SPR crude oil disclosed that:

- The Sun Terminal's internal operational restrictions are less significant than originally believed and, therefore, previously proposed modifications would not substantially increase the terminal's throughput.
- Refining capacity changes in the Beaumont/Port Arthur, Texas area have resulted in a strong likelihood of insufficient local demand to achieve the Sun Terminal's maximum throughput rate.

This analysis concluded that the Sun Terminal's distribution capability, based on projected refinery demands and sustainable tanker loading operations, is approximately 1,200,000 B/D. Further, without constructing additional terminal docks or refinery pipeline connections, the Sun Terminal distribution capability cannot be substantially increased. As a result, implementation plans for the prior Sun Terminal enhancements have been cancelled.

Capline Complex

The 1984 SPR Distribution Capability Analysis, as well as the December 1984 NPC Report on the Capability to Distribute SPR Oil, noted deficiencies in achieving the maximum drawdown/distribution rate in the Capline Complex; however, no distribution enhancements were proposed at that time. Subsequent engineering studies and analyses have been completed and revealed the need for distribution enhancements to alleviate St. James Terminal constrictions on simultaneous pipeline and dock distribution and operational restrictions associated with distribution via the LOCAP Terminal. Without distribution enhancements, the sustainable Capline distribution capability, taking into account potential demand variances, is estimated to be 730,000 B/D.

Distribution enhancements which are proposed for FY 1987, to achieve a Capline distribution capability commensurate with the current drawdown capability of 830,000 B/D, are:

- Installation and modification of DOE pumps and metering systems at the St. James Terminal to permit simultaneous distribution to DOE docks, LOCAP and Capline Terminals; and
- Construction of a direct DOE connection to the Capline Terminal to alleviate potential operational impacts on LOOP/LOCAP pipeline operations.

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The table below summarizes the current drawdown and distribution performance characteristics of the SPR and those under the proposed Distribution Enhancements program.

INITIAL (90-DAY) DISTRIBUTION CAPABILITY
(Thousands of Barrels Per Day)

	Current	Proposed
SPR Drawdown Rate	3,330	3,330
Rated Distribution Capability		
Seaway	390	1,100
Capline	730	830
Texoma	1,200	1,200
Total	2,320	3,130

The FY 1987 request of $4,415,000 for Distribution Enhancements completes the funding for the proposed program.

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(tabular dollars in thousands; narrative material in whole dollars)

	FY 1986 Obligations	FY 1987 Base	FY 1987 Request
MANAGEMENT	$ 15,500	$ 16,270	$ 13,423

Beginning in FY 1987, Management will replace Planning and Management Support and Program Direction as funding categories in the SPR budget. At the present stage of facilities development, with or without a moratorium, activities currently being funded as Planning and Management Support activities are more appropriately described as part of overall Federal management of the SPR program.

The FY 1987 request level of obligations for Management is $13,423,000 a decrease of $2,077,000 from the combined FY 1986 levels for Planning and Management Support and Program Direction.

Management funding provides for all SPR personnel costs, the administrative expenses related to maintaining a wholly dedicated Project Management Office, and contract services required to support management and technical analyses of SPR program issues.

The following table provides a breakdown of the FY 1986 and FY 1987 obligations plan for Management.

	FY 1986	FY 1987	FY 1987 Change
Personnel Compensation	$ 7,033	$ 6,007	$- 1,026
Benefits	1,701	1,801	+ 100
Travel and Transportation	845	750	- 95
Rent, Communications, Utilities	1,369	1,478	+ 109
Other Services	4,552	3,387	- 1,165
Total	$ 15,500	$ 13,423	$- 2,077

The FY 1987 funding changes in the personnel compensation area are a result of the proposed moratorium on further SPR development beginning in January 1986.

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The organizational distribution of SPR manpower is shown below:

	FY 1985	FY 1986	FY 1987 Request
Headquarters:			
Program Office	40	27	22
Field Operations:			
Oak Ridge Operations Office	7	5	4
Project Management Office	131	120	94
Total Strategic Petroleum Reserve	178	152	120

As the table above shows, the proposed FY 1987 manpower level is a decrease of 32 from FY 1986 and a decrease of 58 from FY 1985, reflecting the proposed reduced use of Federal personnel to manage the SPR in a standby operations mode. Activities during FY 1987 will include implementation of the distribution enhancements program; oversight of contractors providing standby operation, maintenance, and security services; conversion of SPR storage caverns to a standby drawdown readiness mode; continued review of inventory and cavern integrity; and continuing analyses of distribution capabilities.

Other Services funds management and technical support necessary to address operational and management issues critical to achieving SPR goals and objectives. Other Services also will provide funding to support ongoing drawdown and distribution capability assessment and evaluation activities, SPR operational and management information systems, analysis of crude oil types and compatibility, addressing alternatives for selling SPR oil during drawdown, and maintaining readiness to resume further SPR development by assessing configuration and crude mix alternatives. The apparent $1.2 million decrease in planned FY 1987 obligations for Other Services is due mainly to the previously discussed transfer of $1 million for FY 1987 support services to the Non-Phase Specific category of the Storage Facilities Development and Operations budget.

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(tabular dollars in thousands; narrative material in whole dollars)

	FY 1986 Obligations	FY 1987 Base	FY 1987 Request
SPR PETROLEUM ACCOUNT	$ 147,494	$ 0	$ 0

Funds are appropriated to the SPR Petroleum Account for the purchase of crude oil, marine and pipeline transportation, customs fees, terminalling charges, environmental taxes and other necessary oil acquisition-related expenses. Pursuant to the provisions of the Energy Policy and Conservation Act (EPCA) of 1975 as amended and SPR Plan Amendment No. 4, funds in the Account may also be used to finance costs associated with a drawdown of the Reserve. Additionally, the Federal receipts from a drawdown and sale of SPR oil create additional budget authority for refilling the Reserve.

The Energy Policy and Conservation Amendments Act of 1985 (P.L. 99-58), which extended the SPR program authorities to June 30, 1989, also established a requirement for the test sale or exchange of approximately 1.1 MMB of SPR crude oil. This sale was commenced on November 18, 1985 by issuance of a Notice of Sale of 1.1 MMB to seventy-two potential purchasers. Seventeen offers were received for a total of approximately 7.2 MMB and, during the week of December 2, 1985, five contracts were awarded for a total of 1.0 MMB. Deliveries under the contracts commenced on December 11, 1985 and were completed in January 1986. A total of 966,809 barrels were delivered and the resulting deposits in the SPR Petroleum Account amounted to approximately $27,949,000.

In compliance with current law, fill of the SPR will continue in FY 1986 to a level of 500 MMB less test sale deliveries of approximately 1 MMB. As previously discussed, the Administration will propose the elimination of the legislative requirement concerning further SPR oil acquisition and linkages to Naval Petroleum Reserve production and sales. No fill is planned in FY 1987.

Based on the Department's current estimate, $577,534,000 of SPR Petroleum Account funds will not be needed to complete the required 500 MMB fill and, as indicated in the summary below, these funds are proposed for deferral.

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Petroleum Acquisition and Transportation
Activity Summary

Total appropriations through FY 1985	$ 15,136,057
FY 1986 reprogramming of unobligated balance of on-budget funds	- 12,964
Lapsed on-budget funds	- 1,925
Balance of appropriations	$ 15,121,168
Obligations through FY 1985	-14,424,089
Balance available in FY 1986	$ 697,079
FY 1986 SPR test sale receipts	27,949
Total Available in FY 1986	$ 725,028
Planned FY 1986 Obligations for 500 MMB fill	- 147,494
Balance proposed for deferral	$ 577,534

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST

STRATEGIC PETROLEUM RESERVE

KEY ACTIVITY SUMMARY
(In thousands of dollars)

KEY ACTIVITY	ACTUAL ACTIVITIES DURING FY 1985	ESTIMATED ACTIVITIES DURING FY 1986	PLANNED ACTIVITIES DURING FY 1987
Storage Facilities Development and Operations:			
Phase I	No Activity	No Activity	No Activity
Phase II	Completed Phase II surface construction and continued leaching of Phase II capacity at Bryan Mound and West Hackberry. Acquired Cavern 17 at Bayou Choctaw in exchange for Cavern 102. (Obligations of $46,067)	Continue leaching at Bryan Mound and West Hackberry through 12/31/85. Drill Cavern 17 at Bayou Choctaw and initiate surface construction associated with preparing the cavern for possible future oil storage. (Obligations of $9,440 from funds appropriated in prior years)	Complete work on Bayou Choctaw Cavern 17. (Obligations of $0)

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KEY ACTIVITY	ACTUAL ACTIVITIES DURING FY 1985	ESTIMATED ACTIVITIES DURING FY 1986	PLANNED ACTIVITIES DURING FY 1987
Phase III	Continued with ongoing Phase III construction and leaching at Bryan Mound and West Hackberry. Cavern drilling at Big Hill was completed and Stage 1A construction and the raw water intake structure were approaching completion. (Obligations of $53,577)	Complete Phase III construction at Bryan Mound and West Hackberry and continue Phase III leaching through 12/31/85. Complete Stage 1A construction and the raw water intake structure at Big Hill and close down the site. (Obligations of $4,504 from funds appropriated in prior years)	No Activity

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KEY ACTIVITY	ACTUAL ACTIVITIES DURING FY 1985	ESTIMATED ACTIVITIES DURING FY 1986	PLANNED ACTIVITIES DURING FY 1987
Non-Phase Specific	Continued activities in support of capacity development and oil fill through FY 1985. Also continued with the SPR Capital Improvements program and initiated the Distribution Enhancements program to improve the capability to distribute SPR oil during drawdown. (Obligations of $106,636)	Continue activities in support capacity development through 12/21/85 and oil fill through 1/31/86. Activities thereafter will focus on moving the SPR to a standby readiness mode and continued implementation of the Capital Improvements and currently proposed Distribution Enhancements program. (Obligations of $187,184 including $136,437 from funds appropriated in prior years)	Maintain all SPR sites in standby readiness mode; continue with Capital Improvements program; and complete currently proposed Distribution Enhancements program. (Obligations of $136,521 from funds appropriated in prior years)

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KEY ACTIVITY	ACTUAL ACTIVITIES DURING FY 1985	ESTIMATED ACTIVITIES DURING FY 1986	PLANNED ACTIVITIES DURING FY 1987
Petroleum Acquisition and Transportation	Filled the SPR at an average daily rate of 159,000 barrels per day, to a total of 489.3 million barrels at the end of FY 1985. (Obligations of $1,367,567)	Continue oil fill to a level of 500 million barrels, less SPR test sale deliveries. (Obligations of $147,494 from funds appropriated in prior years)	No Activity
Management	Continued activities necessary to plan and manage development and fill of the SPR, including information gathering, analytic work and technical support. (Obligations $16,585)	Continue planning, management and other activities to the extent necessary to support continued operations and fill for part of the year and standby operations thereafter. (Obligations $15,500 including $4,014 from funds appropriated in prior years)	Continue those activities essential to planning and managing the SPR in a standby readiness mode. (Obligations $13,423 from funds appropriated in prior years)

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
STRATEGIC PETROLEUM RESERVE

OBJECT CLASS - STORAGE FACILITIES DEVELOPMENT AND OPERATIONS
(In thousands of dollars)

89-0218-0-1-274	FY 1985 actual	FY 1986 estimate	FY 1987 estimate
Direct Obligations:			
25.0 Other Services			
Total obligations ...	$ 206,280	$ 201,128	$ 136,521

	FY 1987 Base		FY 1987 Estimate		Increase (+) or Decrease (-)	
	FTE	Amount	FTE	Amount	FTE	Amount
Direct Obligations:						
25.0 Other Services	---	$ 362,554	---	$ 136,521	---	$- 226,033
Total obligations ...						

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
STRATEGIC PETROLEUM RESERVE

OBJECT CLASS - MANAGEMENT
(In thousands of dollars)

89-0218-0-1-274		FY 1985 actual	FY 1986 estimate	FY 1987 estimate
Direct Obligations:				
11.1	Full-time permanent ..	$ 6,948	$ 6,653	$ 5,621
11.3	Other than full-time permanent	333	330	264
11.5	Other personnel compensation	31	50	122
12.1	Personnel benefits: Civilian	801	900	839
13.0	Benefits for former personnel	0	801	962
21.0	Travel and transportation of persons ..	558	845	750
22.2	Transportation of things	(4)	41	47
23.2	Communications, utilities, and other rent	730	1,182	1,279
24.0	Printing and reproduction	2	43	45
25.0	Other services	6,004	4,552	3,387
26.0	Supplies and materials	2	103	107
31.0	Equipment	200	0	0
41.0	Grants, Subsidies and Contributions ..	980	0	0
	Total obligations	$ 16,585	$ 15,500	$ 13,423

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
STRATEGIC PETROLEUM RESERVE

OBJECT CLASS - MANAGEMENT
(In thousands of dollars)

	(On Budget)	Fiscal Year 1987 Base FTE	Fiscal Year 1987 Base Amount	Fiscal Year 1987 Estimate FTE	Fiscal Year 1987 Estimate Amount	Increase (+) or decrease (-) FTE	Increase (+) or decrease (-) Amount
Direct Obligations:							
11.1	Full-time permanent ..	---	$ 6,858	---	$ 5,621	---	$- 1,237
11.3	Other than full-time permanent	---	292	---	264	---	- 28
11.5	Other personnel compensation	---	163	---	122	---	- 41
	Total personnel compensation	152 1/	$ 7,313	120	$ 6,007	- 32	$- 1,306
12.1	Personnel benefits: Civilian		1,113	---	839	---	- 359
13.0	Benefits for former personnel	---	0	---	962	---	+ 962
21.0	Travel and transportation of persons ..	---	845	---	750	---	- 95
22.0	Transportation of things	---	47	---	47	---	0
23.2	Communications, utilities, and other rent	---	1,279	---	1,279	---	0
24.0	Printing and reproduction	---	45	---	45	---	0
25.0	Other services	---	4,914	---	3,387	---	- 1,527
26.0	Supplies and materials	---	107	---	107	---	0
31.0	Equipment	---		---		---	0
	Total obligations	152 1/	$15,663	120	$13,423	- 32	$- 2,240

1/ FTE allowance level for transition to moratorium.

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
STRATEGIC PETROLEUM RESERVE

OBJECT CLASS - PETROLEUM ACQUISITION AND TRANSPORTATION
(In thousands of dollars)

89-0233-0-1-274	FY 1985 actual	FY 1986 estimate	FY 1987 estimate
Direct Obligations:			
25.0 Other services			
SPR off-budget program	$ 1,367,567	$ 147,494	$ 0
Total obligations	$ 1,367,567	$ 147,494	$ 0

	FY 1987 Base		FY 1987 Estimate		Increase (+) or Decrease (-)	
	FTE	Amount	FTE	Amount	FTE	Amount
Direct Obligations:						
25.0 Other services						
SPR off-budget program	---	$ 0	---	$ 0	---	$ 0
Total obligations	---	$ 0	---	$ 0	---	$ 0

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
1987 CONTRACT LISTING
STRATEGIC PETROLEUM RESERVE
(In Thousands of Dollars)

	Estimated Amount
Storage Facilities Development Operations	
o Operations/Operations Support	
- Boeing Petroleum Services	$ 84,812
- Wells Fargo Guard Services	10,109
- General Services Administration	5,841
- Systematic Management Services	4,200
- Aerospace Corporation	2,600
- Sandia National Laboratories	1,525
- Defense Contract Administration Services	873
- Walk, Haydel and Associates	500
- U. S. Government Printing Office	61
- To Be Determined	3,073
Subtotal	$113,594
o Capital Improvements	
- Walk, Haydel and Associates	3,304
- Boeing Petroleum Services	2,724
- To Be Determined	12,484
Subtotal	$ 18,512
o Distribution Enhancements	
- To Be Determined	4,415
Total, Storage Facilities Development and Operations	$136,521
Management	
o Analytic Support Services - Headquarters	$ 2,337
o Software Enhancements and Data Systems Support	1,050
o Rent, Communications and Utilities - Field Office	1,478
Total, Management	$ 4,865

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DEPARTMENT OF ENERGY

Proposed Appropriation Language

Emergency Preparedness

For necessary expenses in carry out emergency preparedness activities, $6,044,000. (Department of the Interior and Related Agencies Appropriations Act, 1986, as included in Public Law 99-190.)

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DEPARTMENT OF ENERGY

FISCAL YEAR 1987 CONGRESSIONAL BUDGET REQUEST

SUMMARY OF ESTIMATES BY APPROPRIATION BY MAJOR ACTIVITY

EMERGENCY PREPAREDNESS

BUDGET AUTHORITY IN THOUSANDS OF DOLLARS

	FY 1985 Actual	FY 1986 Estimate	FY 1987 Request
Total, Energy Emergencies	$ 6,045	$ 5,750	$ 6,044

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Department of Energy

FY 1987 Congressional Budget

PROGRAM OVERVIEW

Emergency Preparedness

The Emergency Preparedness Program supports the goal of an adequate and secure supply of energy in the United States at reasonable costs. This means sufficient energy to meet our nation's short and long-term needs, along with an ability to analyze possible risks in order to avoid undue dependence on any single source of supply where severe interruption of that supply would jeopardize our economy, strategic capabilities, or defense energy requirements. The underlying policy is based upon the assumption that effective energy emergency preparedness rests on the development of processes for anticipating and responding to a multitude of potential national security-related threats. In particular, the program seeks to promote energy stability, energy security and energy strength through the following objectives:

- o Reduce the Nation's vulnerability to severe energy supply disruptions,
- o Ensure adequate fuel for defense needs (including mobilization), for fulfilling U.S. treaty obligations, and for other vital national security purposes,
- o Honor other U.S. obligations in international treaties and agreements,
- o Maintain an ongoing energy supply & demand analytical capability to anticipate and assess possible risks and/or disruption to the Nation's energy supply network.
- o Ensure the preparedness for Continuity of Government (COG) emergencies involving actions to maintain the essential functions of government before, during, and after a national defense emergency.

The Emergency Preparedness Program is based upon a fundamental recognition that our nation will remain vulnerable through this decade to the risk of various types of energy supply disruptions. The Emergency Preparedness Program was established to provide a coordinated national capability for helping to reduce the Nation's vulnerability to severe energy supply disruptions, and to mitigate adverse impacts on the Nation in the event of a severe energy supply shortage or a disruption to the Nation's energy systems.

This program also supports the Department's continuation of the essential functions of the government in the event of mobilization or war. The Emergency Preparedness Program is designed as a staff support function, consisting of a highly trained professional cadre with institutional knowledge and experience in various forms of energy (petroleum, gas, coal, and electricity) and other energy industry operations and energy market analysis, using the latest ADP and analytical tools. This cadre can be augmented by other industry experts and Departmental personnel in an energy emergency. The strategy for accomplishing these objectives includes utilization of in-house federal staff supported by integrated energy information systems and other departmental data resources, coupled with policies and procedures to effectively use the Strategic Petroleum Reserve, and participation in a program of exercises to demonstrate our ability to fulfill U.S. commitments to allies, the International Energy Agency, NATO, and for coordination with State governments and industry.

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FY 1986 Accomplishments:

The following are planned activities and accomplishments for FY 1986. The benefit of these accomplishments will be to provide an enhanced national capability to prevent, prepare for, and possibly respond to threats to our Nation's energy security.

- Conduct analyses to assess the vulnerability of the Nation's energy supplies and resources to possible threats, including sabotage, terrorism, acts by hostile foreign governments and natural disasters. These analyses will include completion of a study on refinery vulnerabilities. Results of these studies will enhance preparedness measures which prevent or reduce the likelihood of these events from affecting our national security.

- Establish a unified process (Energy Emergency Management System) for conducting Department preparations for and responses to a wide range of potential energy emergencies. This system will enhance the effectiveness of the Department's energy emergency decisionmaking and operations processes.

- Provide technical studies for National Security Council-mandated classified defense energy taskings, develop the Federal Resource Assistance System (FRAS). Begin a wartime energy requirements study with DOD. Continue planning and coordination of DOE participation in Federal Emergency Management Agency civilian readiness, continuity of government, and defense-related exercises. The FRAS supports Defense Production Act implementation in the event of a national defense emergency to support defense requirements.

- Initiate additional planning for the implementation of Defense Production Act responsibilities to include specialized applications of the priority rating system to support mobilization transportation requirements, a key part of ensuring that defense-related resource needs are fulfilled in the event of a national defense emergency.

- Manage the recruiting and training of Joint Operations Staff (JOS) personnel to fulfill NATO Wartime Oil Organization functions. Develop detailed JOS management plans in coordination with Canadian Government officials and JOS management. Develop plans and operating procedures for the operation of the NATO Wartime Oil Organization - West at its wartime relocation site. The NATO Wartime Oil Organization is designed to ensure that NATO alliance defense energy needs are met in the event of war and mobilization for war.

- Continue major work on defense energy needs to support various scenarios including industrial defense related energy needs, and support for other defense transportation needs in a major emergency. This work is necessary to ensure that defense-related resource needs can be met in a national defense emergency.

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- Continue evolving a total, integrated DOE Continuity of Government (COG) Plan, and provide training for DOE COG teams. This effort provides for the continuation of essential governmental activities in a national emergency.

- Continue technical support for IEA, NATO, and other international energy agency activities in coordination with other DOE organizations Provide technical support and analysis for bilateral energy matters. Conduct, evaluate, and participate in follow-on activities concerning the Allocation Simulation Test (AST-5) exercise. Prepare report to the IEA on U.S. participation in AST-5. These efforts ensure the ability of the U.S. to implement international agreements and obligations such as those of the International Energy Agency and North Atlantic Treaty Organization to support energy security objectives.

- Provide representation and technical support for participation in the international policy and planning activities of the IEA Standing Committee on Emergency Questions (SEQ). The SEQ coordinates energy emergency preparedness issues for the International Energy Agency.

- Review adequacy of plans to implement U.S. energy commitments to our allies under treaty obligations for a range of emergencies. This review ensures that energy security objectives can be met.

- Conduct evaluations of energy emergency exercises to ensure a systematic approach to "lessons learned" as well as improved energy emergency response planning, policy analysis, and operations.

- Support conduct of Strategic Petroleum Reserve (SPR) test sale, and perform monitoring functions to enable a fully documented report on the test sale. This sale has successfully demonstrated our capability to sell oil from the SPR in accordance with established regulations and procedures.

- Continue program and procedure modifications resulting from new policy formulations and follow-up studies performed for the Department (eg: FY 85 National Petroleum Council study); incorporate information from IEA coordinated stock drawdown policies into SPR policy analyses. These efforts serve to ensure that SPR policy and procedures are coordinated with international efforts on use of stocks in the event of an energy supply disruption.

- Continue development and analysis of policies and programs to support public information activities in accordance with energy emergency response strategy. Effective public information activities are important to maintaining public confidence in governmental energy emergency preparedness programs in time of emergency.

- Continue maintaining the Department's Executive Reserves by recruiting and training new members and integrating the Reservists with DOE regional emergency activities. These activities ensure that an effective National Defense Executive Reserve comprised of industrial technical experts is available in the event of national emergency to augment governmental resources.

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- Operate the electronic mail system linking DOE with state energy offices and others. This system is an important part of our capabilities to meet public information objectives in non-emergency and emergency periods by providing current energy information.

- Continue the preparation of assessments and analyses of the vulnerability of the Nation's energy systems to actual or potential "near-term" disruptions. These analyses will be prepared in response to potential events which may occur nationally or internationally during the fiscal year.

- Refine, integrate and maintain specialized energy data bases to support emergency operations activities including support for several classified projects.

- Continue to develop and implement an automated Energy Emergency Decision Support System to provide situation analysis on domestic and international events. Continue to refine and develop departmental emergency response procedures.

- Assist the DOE Telecommunications Office in its work with the National Communication System in developing an Emergency Communications System for the DOE. This effort supports Government objectives to provide for an effective communication system in the event of national emergency.

- Maintain operations readiness for energy emergency situations including ADP, reference, classified documents, communications, Alert Coordination Officer system, and logistics requirements. These operational resources and activities support the total DOE emergency preparedness program.

- Analyze emergency options focusing on SPR status, assess SPR requirements and use based upon current market conditions, the international situation, and fiscal conditions. These analyses ensure that preparedness is maintained to successfully use the SPR in the event that emergency conditions so require.

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SPECIFIC OBJECTIVES FOR FY 1987 to FY 1990 FORMULATED IN RESPONSE TO PUBLIC LAWS ARE:

- o Development and support for supply enhancement strategies particularly as relates to the Strategic Petroleum Reserve as required by the Energy Policy and Conservation Act (EPCA).

- o Development and support for international energy security activities with emphasis on analysis and planning for U.S. participation in the International Energy Agency and NATO energy emergency preparedness requirements as required by the Energy Policy and Conservation Act (EPCA) and the Defense Production Act (DPA).

- o Development and support for a wide range of defense energy emergency preparedness activities as required by the Energy Policy and Conservation Act (EPCA), the Defense Production Act (DPA), various Executive Orders and Federal Preparedness Circulars, and the International Emergency Economic Powers Act (IEEPA).

- o Conduct of energy supply adequacy, risk assessments and analyses of the vulnerability of the Nation's energy systems required by the Federal Power Act (FPA), the Natural Gas Act (NGA), the Public Utility and Regulatory Policies Act of 1978 (PURPA), the Fuel Use Act (FUA) and the Energy Policy and Conservation Act (EPCA).

- o Continue the development and maintenance of an operational Emergency Executive Reserve Program as authorized by the Defense Production Act (DPA).

- o Development and maintenance of an energy emergency operations capability to ensure preparedness for Continuity of Government (COG) emergencies and energy supply disruptions as authorized by the Federal Power Act (FPA), Defense Production Act (DPA), Federal Civil Defense Act (FCDA), Energy Policy and Conservation Act (EPCA) and the Department of Energy Organization Act, and the Disaster Relief Act of 1974.

- o Development and implementation of an Energy Emergency Management System, to better organize the Government's preparedness for and responses to energy emergencies, as authorized by the Department of Energy Organization Act, the Energy Policy and Conservation Act (EPCA), and the Federal Power Act (FPA).

The accomplishment of energy emergency preparedness program objectives will contribute to reducing the Nation's vulnerability to energy supply disruptions, and to mitigate adverse impacts on the Nation in the event of shortages or disruptions of the energy supply systems. The strategy for the achievement of these objectives emphasizes coordination with industry; and promoting fulfillment of U.S. commitments to allies, the International Energy Agency, NATO, and the maintenance of our national security. Administration policy assumes that effective energy emergency preparedness lies in developing processes for anticipating and responding to a multitude of potential crisis situations. We will continue to view the accomplishment of program objectives in accordance with our belief that preparedness is a constantly evolving, changing set of strategies, which are continually adapted to new foreign and domestic circumstances.

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
LEAD TABLE
EMERGENCY PREPAREDNESS
(Tabular dollars in thousands. Narrative material in whole dollars.)

	FY 1985 Appropriation	FY 1986 Adjusted Appropriation	FY 1987 Base	FY 1987 Request	Request vs Base
Emergency Preparedness					
Emergency Planning:					
Operating Expenses. . .	$ 500	$ 555	$ 555	$ 450	$ -105
Subtotal.	$ 500	$ 555	$ 555	$ 450	$ -105
Emergency Operations:					
Operating Expenses. . .	$ 766	$ 420	$ 420	$ 368	$ - 52
Subtotal.	$ 766	$ 420	$ 420	$ 368	$ - 52
Program Direction:					
Operating Expenses. . .	$4,779	$4,775	$5,076	$5,226	$ +150
Subtotal.	$4,779	$4,775	$5,076	$5,226	$ +150
Total:					
Operating Expenses. . .	$6,045	$5,750	$6,051	$6,044	$ -7
Emergency Preparedness.	$6,045	$5,750	$6,051	$6,044	$ -7
Staffing Total FTE's	74	71	71	71	0

Authorization: Federal Power Act Sections 202 (a,c-e), 311; Defense Production Act - Sections 101 (a-c), 708, 710; Public Utility Regulatory Policies Act - Sections 210, 204, 209, 607; Natural Gas Policy Act - Title III; Power Plant and Industrial Fuel Use Act - Sections 404, 405; Department of Energy Act - Sections 101, 102; International Emergency Economic Powers Act - Title III; Trade Expansion Act - Section 232(b); Energy Policy and Conservation Act - Sections 106(a)(2), 106(b)(2), 151-161, 252, 271; Export Administration Act of 1979 - Section 7(d)(3); Clean Air Act - Section 110(f); Energy Emergency Preparedness Act of 1982; Export Administration Amendments Act of 1985 - Sections 126, 203; Executive Orders 11490, 10647, 10421, 10480.

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Department of Energy

FY 1987 Congressional Budget Request

Adjustments to FY 1986 Appropriations

	FY 1986 Conference	Gramm-Rudman-Reduction	Subtotal	Adj. Approp. Total
Emergency Preparedness				
Emergency Preparedness	$ 6,008	$ -258	$5,750	$5,750
Total, Emergency Preparedness	$ 6,008	$ -258	$5,750	$5,750

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST

SUMMARY OF CHANGES

EMERGENCY PREPAREDNESS

FY 1986 Appropriation enacted.	$5,750
Built in increases and decreases:	
* Increases for within grades and merit pay increases	+ 120
* Increases for administrative overhead	+ 181
FY 1987 Base	$6,051
Program increases and decreases:	
* Increase for full support of 71 FTE's	+ 150
* Decrease to Emergency Planning Contracts.	- 105
* Decrease to Emergency Operations Contracts.	- 52
FY 1987 budget request	$6,044

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NARRATIVE JUSTIFICATION

GOALS/OBJECTIVES

During FY 1987, the Emergency Preparedness Program will continue to emphasize energy security-related preparedness activities internationally and domestically. Our participation in a variety of energy emergency preparedness tests and exercises will allow us to provide an integrated approach to policy analysis, emergency planning, and operations; while determining those areas that require new responses or priority attention by the Executive and Legislative branches of government.

As the Emergency Preparedness Program progresses, we are better able to focus our resources on supporting a limited number of national security-related objectives. We are developing energy security-related plans/analyses, conducting analysis and evaluations of important policy issues, supporting supply enhancement strategies which focus on the use of the Strategic Petroleum Reserve, and participating in international energy security activities which involve the International Energy Agency and NATO. Additionally, we are developing national emergency/continuity of government plans/procedures, analyzing defense energy requirements, and refining public information/outreach strategies. We are also committed to providing rapid risk assessment and analytical capabilities as required by senior Departmental officials in response to ongoing threats to our energy security and in support of our international obligations. Finally, we will provide significant support to the Office of the Secretary in the development, testing, coordination of Departmental emergency response procedures, and in a special series of classified tasks.

Accordingly, the FY 1987 Energy Emergency Preparedness Program will:

- Analyze actual or prospective disruptions to energy systems, and possible responses to such disruptions; assess national security and other critical national energy needs, and how best to meet these needs. Special emphasis will be placed on the conduct of analyses to identify and assess plausible threats to energy systems security, and the evaluation of alternative measures to respond to or at least mitigate such threats.

- Be responsible , in collaboration with other Departmental elements, for overall development, implementation, testing and evaluation of Departmental energy emergency preparedness policies, plans, and operations (with the exception of nuclear-related accidents). Emphasis will be placed on evaluating the potential impacts on our economy and national security from severe energy supply disruptions .

- Such policies and programs will include planning and testing activities prior to energy emergencies to mitigate the adverse impacts of an emergency emphasize public information programs and provide for effective use of supplies (through utilization of the U.S. Strategic Petroleum Reserve).

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- Initiate planning efforts to ensure effective U.S. capability and preparedness to meet international commitments to the International Energy Agency (IEA), the North Atlantic Treaty Organization (NATO), and other countries. The program will provide key resources to develop plans and programs to support U.S. participation in the IEA emergency sharing system, Allied stock drawdown decisions and the NATO civil emergency preparedness activities.

- The program will obtain and interpret, in conjunction with others, necessary information on market operations, national security conditions and other relevant circumstances to monitor both domestic and international areas and assess the impact of events on supply availability, the U.S. economy, trade policy, and the national security. Such assessments will be based upon current and projected information on energy prices and supplies, inventories, marketing activities. These assessments and other situation analyses will also be prepared for emergency conditions and will be disseminated to states and local governments and the general public as part of a Federal emergency response effort. We will also examine and evaluate impacts of changes from pre-emergency conditions to emergency energy supply and national defense mobilization conditions.

- Develop, implement and enhance systems to ensure the efficient operation of the Department's emergency response policies and programs prior to and during emergencies.

- Conduct assessments regarding the national security and defense implications of energy emergency response policies and programs to assure that they are in coordination with other U.S. agencies. This will be accomplished through participation in classified national defense tests and exercises, involvement in senior-level working groups and ongoing program analyses.

Within the Department, we are moving ahead with refinement and further development of support systems for facilitating efficient and reliable emergency response decisionmaking and program implementation. (See table of descriptions of ongoing data systems in place and under development.) Our experiences gained in conducting major tests and evaluations have contributed greatly to directing further improvements to the Department's energy emergency preparedness capabilities, e.g., further enhancement of specialized data bases and logistics to support the Department's responsibilities for continuity of government and special classified activities as specified in various Executive Orders and Federal Preparedness Circulars.

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The establishment of an Energy Emergency Policy & Evaluation function within the Energy Emergency Preparedness Program has resulted in a greater emphasis on the ability to perform rapid analysis of energy emergency policy issues and provide a focal point for ongoing energy emergency policy analysis and evaluation activities. This means that the program is better able to incorporate significant "lessons learned" from the various preparedness exercises in order to improve our response strategies and procedures. Additionally, we will develop a variety of risk assessment and vulnerability assessment tools in order to support the critical energy system vulnerability projects now under way including the continued identification of threats to major energy supply systems, research of specific vulnerabilities and their probable impacts, and the development of cost-effective mitigation strategies which can be made available to appropriate parties.

Finally, the program will maintain in-house expertise for planning and operations as the most effective strategy for accomplishment of Administration policy objectives during an energy emergency. This approach maintains a small group of experienced professionals who can be quickly augmented in an energy emergency by National Defense Executive Reservists (if appropriate) and other Departmental personnel. The FY 1987 request is $6,044,000 and 71 FTE, essentially unchanged from FY 1986. Specific activities for which funding is sought are described under Emergency Planning expenses, Emergency Operations expenses and Program Direction.

EMERGENCY PLANNING FY 1987 ACTIVITIES

	FY 1985	FY 1986	FY 1987
Emergency Planning Operating Expenses	$ 500	$ 555	$ 450

The FY 1987 request for Emergency Planning is $ 450,000 a decrease of $105,000 from the FY 1986 request. The request provides necessary programmatic contract support for emergency planning activities including:

- o Support services for emergency preparedness exercise preparation/conduct and development of emergency management processes to augment in-house staff including test design, procedural development, simulation of emergency management concepts, and assistance in performing evaluation and follow-up. FY 1987 will continue efforts to improve Departmental emergency response management procedures, follow-up on lessons learned from previous major tests, and conduct of major exercises including the NATO WINTEX/CIMEX classified test. $200,000

- o Support is requested for classified energy security-related tasks. These classified tasks are a continuation of a major energy security-related activity, Project 87, begun in late FY 83. These funds would provide contract support in the area of modeling/simulation, analysis of technical issues associated with possible utilization of the Defense Production Act (i.e. estimation of economic sector level requirements for energy during mobilization), and programmatic contract support for in-house staff involved in complex analyses in coordination with the Department of Defense and the National Security Council. $250,000

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EMERGENCY OPERATIONS FY 1987 ACTIVITIES

	FY 1985	FY 1986	FY 1987
Emergency Operations Operating Expenses	$ 766	$ 420	$ 368

The FY 1987 request for Emergency Operations is $368,000, a decrease of $52,000 over the FY 1986 request. The request provides necessary programmatic contract support as follows:

- Funds are requested for automated data systems processing support currently provided to the Emergency Preparedness Program by EIA and other sources. Such services include technical support for various ADP equipment, specialized computer programming assistance for special classified projects and other data analytic functions, and data services. Additionally, funds are requested for microcomputer equipment maintenance services for ADP equipment provided to the Emergency Preparedness Program by EIA. The Emergency Preparedness Program has available a number of office systems (used for electronic mail communication, word processing, data processing with mainframe computer), a hard wired data processing terminal cluster utilized for basic data processing support with the mainframe computer, and portable terminals (used to augment the electronic mail system during exercises and in the event of emergency) which must be properly serviced to maintain assured operations. $213,000

- Funds for maintaining the electronic mail communication system which supports DOE energy emergency preparedness public information activities with state and local governments, DOE Operations Offices and key elements of the private sector including the Department's Executive Reservists in energy emergencies. $70,000

- Energy data base contractor support including commercial timesharing charges for commercial data sources, software upgrades, and hardware to support special classified projects and data analytic functions. $85,000

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PROGRAM DIRECTION

	FY 1985	FY 1986	FY 1987
Emergency Preparedness	$4779	$4775	$5225
Staffing Total FTE	74	71	71

The FY 1987 request for Program Direction is $5,226,000 an increase of $451,000 over the FY 1986 request. The FY 1987 request would maintain the Emergency Preparedness program at 71 FTE. The FY 1987 request represents an increase in administrative overhead costs. These increases include rent, communications and inflationary adjustments associated with normal supplies and logistical services which are managed by the Department centrally. FY 1987 salary/benefit costs are estimated at $3,763,000 plus administrative overhead costs. Program Direction also includes official travel at $150,000 and computer support funding per OMB A-121.

This level of resources provides necessary and sufficient capabilities in the area of emergency planning for analyzing policy issues, solving practical energy emergency problems, and for updating response measures associated with energy supply emergencies. Additionally, this level of resources provides necessary and sufficient capabilities in the area of emergency operations for review and analysis of energy resources as they relate to emergency preparedness, and an emergency operations capability.

Emergency Preparedness staff at this level are responsible for development and evaluation of policy options/issues, formulation of emergency plans and procedures, development of risk assessments and situation analyses, energy supply system monitoring, conduct of emergency operations, data analysis/assessment/reporting, participation in tests/exercises, maintenance of defense preparedness, and analysis of SPR readiness status and use strategies along with the capability to perform the many "ad hoc" quick reaction projects to support DOE senior management and respond to Congressional requests.

Accordingly, the mix of programmatic elements demands a high degree of professional staff expertise. For example, the energy supply system vulnerability to sabotage and terrorism studies require background and analytical capabilities in energy systems engineering and operations, energy market analysis, refinery operations, power supply reliability and adequacy, natural gas pipeline transportation and operational systems analysis, and generic expertise on assessing strategic and tactical threats (e.g., effects of terrorism, natural disasters, mobilization/war). Our program staff have background and expertise in various energy security areas including analysis of defense energy requirements to support mobilization and wartime operations as well as fulfill NATO obligations, conduct of macroeconomic studies (modeling, gaming theory), and development/testing of complex scenarios to support work in defense-related issues (including Continuity of Government classified activities).

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Another important area affecting our energy security involves support for International Energy Agency (IEA) programs including conduct of Allocation Simulation Tests, National Emergency Sharing Organization plans, and implementation of policy objectives for coordination of stock drawdown. Our staff has gained extensive experience in performing analysis of energy emergency impacts of international agreements (including legal issues that affect such components as the Voluntary Agreement and the Plan of Action for company participation in the IEA process, and the important relationship of the use of the Strategic Petroleum Reserve to support stock coordination policy objectives). Ongoing policy analysis, planning and operational capability build a substantial base of staff experience in understanding these complex annd often sensitive matters which impact on our national security.

A unique area of expertise resides in staff who develop and refine Departmental energy emergency management processes. These individuals (operations research analysts) utilize the energy emergency data systems and related analysis to support executive-level decision making requirements. Such skills rest heavily on involvement in our comprehensive program of tests, exercises and systematic evaluations. These activities require sensitivity to Departmental decision making dynamics.

The nature of this program demands the ability to periodically assess workloads and shift project priorities in accordance with changing world conditions. This means that the Emergency Preparedness Program relies heavily on utilization of task force groupings of professionals with unique technical expertise from various program elements to accomplish time sensitive complex tasks. Additionally the Emergency Preparedness program utilizes tests and exercises as a means for cross training of staff in emergency functions. This, of course, promotes a higher degree of preparedness through the training of staff in critical skills and functions.

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KEY ACTIVITY SUMMARY

Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Emergency Preparedness Program Direction		
Develop and test various management systems to manage energy emergencies.	Establish a unified process (Energy Emergency Management System) for conducting Government preparation for and responses to a wide range of potential energy emergencies (including highly classified projects).	Enhance the Energy Emergency Management System by developing more diverse scenarios to which the Government can be prepared to respond; by conducting periodic exercises to test and refine its capabilities; and by augmenting associated analytical and decision support systems.
Conduct analyses to assess the vulnerability of energy systems to possible threats, including sabotage/terrorism.	Continuing analyses. Refinery vulnerability study completed.	Continuing analyses in response. to threat assessments.
Provide support for national emergency policies regarding Continuity of Government (COG) preparedness including planning, training for COG teams, participation in special classified projects and exercises. Administer the DOE Emergency Coordinator program.	Continuing.	Continuing.
Perform technical studies and provide expertise in support of NSC-mandated classified taskings, e.g., NSDD-134 and NSDD-188. Continue development of Defense Production Act plans and analyses of defense energy needs.	Perform technical studies and provide expertise in support of NSC-mandated classified defense energy taskings, e.g., NSDD-134 and NSDD-188. Develop Federal Resource Assistance System (FRAS). Continue DPA planning/analyses of defense energy needs.	Continuing.

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KEY ACTIVITY SUMMARY

Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Manage NATO Wartime Oil Organization preparedness activities including planning, staffing, training for Joint Operations Staff functions.	Continuing	Continuing.
Continue technical support for IEA, NATO, other international energy agency activities. Do technical support and analysis of bilateral energy issues.	Continuing	Continuing.
Plan for IEA AST-5 and conduct NATO exercise. Provide representation and technical support for IEA SEQ.	Conduct AST-5. Plan for NATO WINTEX/CIMEX-87. Provide representation and technical support for IEA SEQ.	Follow-up on lessons learned from AST-5, other FY-86 exercises. Provide representation for IEA SEQ. Conduct WINTEX/CIMEX-87. Plan for AST-6.
Plan for and conduct classified exercises.	Plan for and conduct other periodic exercises. Conduct evaluation of exercises to ensure a systematic approach to "lessons learned".	Follow-up on lessons learned from exercises and perform evaluations of current exercises.
Conduct policy analyses of effective level of SPR fill, based on current oil market conditions, international situation, and fiscal conditions.	Continuing.	Continuing.
Initiate program design and development modifications in response to policy changes.	Continue modifications from new policy formulations; incorporate findings from FY-85 National Petroleum Council study on SPR use into SPR policy analyses.	Continue technical support to implement IEA coordinated stockdraw policy and analyze implications for SPR fill and use policy.

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KEY ACTIVITY SUMMARY

Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Prepare for SPR test sale (mandated by EPCA).	Support conduct of SPR test sale, and monitor test to fully document results.	Follow up on procedure modifications from SPR test sale.
Provide energy situation impact/risk analysis in response to domestic/international events.	Continuing.	Continuing.
Refine, integrate and maintain specialized energy data bases to support emergency operations activities including support for several special classified projects.	Continuing.	Continuing.
Continue preparation of assessments/analyses of the vulnerability of the Nation's energy systems to actual or potential near-term disruptions.	Continuing.	Continuing.
Maintain operations readiness for energy emergency situations including ADP, reference, classified document control, Alert Coordination Officer system and logistics needs. Operate the emergency electronic mail system linking DOE with state energy offices, etc.	Continuing.	Continuing.

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KEY ACTIVITY SUMMARY

Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Continue maintaining the DOE National Defense Executive Reserves by recruiting and training new members and integrating Reservists with regional emergency activities.	Continuing	Continuing.
Provide a public information capability for states, local governments and the general public as part of a Federal emergency response effort.	Continuing.	Continuing.
TOTAL: $4,779,000	TOTAL: $4,775,000	TOTAL: $5,226,000

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KEY ACTIVITY SUMMARY

Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Emergency Planning Operating Expenses		
Support services for emergency preparedness tests and exercises, development of emergency management processes, test design, procedure development, situation analysis.	Same as for FY 1985.	Reflects completion of tasks begun in FY86 with more analysis being done by in-house staff.
Support for classified energy security tasks including modeling, simulation, analysis of technical issues		
TOTAL: $500,000	TOTAL: $555,000	TOTAL: $450,000
Emergency Operations Operating Expenses		
ADP support services provided by EIA, including equipment support, data analytic support, and special programming assistance.	Reflects decreased support service activity as data systems are developed.	Same as for FY 1986. Reflects system maintenance activities.
Energy data base contractor support, timesharing services, electronic mail.		
TOTAL: $766,000	TOTAL: $420,000	TOTAL: $368,000

DOE ENERGY EMERGENCY PREPAREDNESS PROGRAM DESCRIPTION
INTERNATIONAL AFFAIRS AND ENERGY EMERGENCIES

[1] DESCRIPTION

The following databases and computer systems are used by the Office of Energy Emergencies (OEE) to support emergency response activities:

Energy Situation Report (ESR)

Description: The ESR provides unique "real time" and near term quantitative and economic information concerning energy supplies, and other factors which affect the energy supply situation, e.g., weather, labor contracts, transportation, etc. The data covers both domestic and international energy supplies. The purpose of the ESR is to provide current information and allow DOE analysts to detect trends so as to anticipate possible energy supply problems such that appropriate analysis and response actions can be initiated. This database also provides current and recent historical data that could be used by analysts and decision makers in an energy emergency or in a national security emergency. Data is extracted from the ESR to prepare graphic charts on oil stocks, gasoline stocks, petroleum prices and petroleum movements.

Status: The ESR is normally maintained on the Energy Information Administration's EIA mainframe computer. However, it can be down loaded to a micro computer and then maintained or a new ESR can be prepared on the micro computer. Most graphics are limited to the EIA main frame.

Energy Facility Locator System (EFLS)

Description: The EFLS is a micro computer based (D Base 3) data base that contains information on the physical location by county and zip code and some major characteristics of various types of key energy facilities, e.g., electric generating stations, oil refineries, natural gas underground storage, electric power system control centers and DOE facilities. Preparations have been made for the addition of other energy facilities such as electric power substations, electric transmission lines, oil and gas pipelines to this system. This system supports analysts and decision makers during national security emergencies and was developed in support of special access classified Continuity of Government programs. The system could also be used to support analyses during potential or actual energy emergencies.

Status: The EFLS system has been developed by the OEE staff with contractor assistance and is complete in its initial form. The current effort is directed towards external hard disk acquisition to provide adequate machine capability and identifying and loading additional energy facility data to make the system fully operational.

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Decision Support System (DSS)

Description: The DSS is a micro computer based (Lotus) series of programs that provide analytic output in a form that can be readily used by management to analyze options and recommend decisions during an energy emergency. It is intended to provide graphic outputs, reference lists, lists of options, and steps necessary to implement a decision.

Status: The current system has been developed by a contractor and in-house staff. The present system can supply graphic outputs, etc., in support of decision makers during a petroleum supply disruption with some limited capability to support decision makers during other types of energy emergencies. OEE now plans to utilize a contractor to enhance the data management capability of this system and to make the DSS an integrating system for other databases and systems that support emergency operations, e.g., Energy Situation Report (ESR), Energy Facility Locator System (EFLS), etc.

Reference Locator System (RLS)

Description: The RLS is a microcomputer based system developed by OEE staff to keep track of the reference materials that are available in the Response Coordination Center (RCC), the Emergency Operations Center, and the various Continuity of Government (COG) relocation sites. This system allows the members of the COG teams to ensure that the materials they will need during a national security emergency are pre-positioned and kept current. It also allows the user to quickly locate references that may be of use during an emergency.

Status: The basic system is operational with current efforts directed towards inputting the data on all the various reference materials. Some refinements and enhancements may be made at a later date after more experience is gained in using the system. The system is being used to maintain reference materials at 4 operating locations including a NAIO facility supported by DOE.

Message Logging System (MLS)

Description: The MLS is a microcomputer based system developed by OEEO staff to log messages received during tests and exercises or during actual emergencies. The system allows tracking of action items, and checking for adequate message description as well as an efficient means of keeping everyone, especially management, informed as to the message traffic.

Status: The system was used during AST-5 and Rex 86 Alpha. Some refinements have been made based on the experience gained. It is now fully operational.

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Executive Reserve Information System (ERIS)

Description: The ERIS is used to keep track of information concerning the members of DOE's three National Defense Executive Reserve (NDER) units. It provides information on the status of the NDER member's security clearance, areas of expertise, employer, mailing address, normal and emergency phone numbers, etc.

Status: The system is based on a number of IBM Displaywriter databases and is currently used extensively in the day-to-day administration of the NDER units. Future plans call for moving this system to a micro computer to allow more efficient and quicker operation and upkeep of the system.

Voluntary Offer Tracking System (VOTS)

Description: The VOTS is a microcomputer based system developed by OEE staff to record, verify, and track the status of non-reporting company voluntary offers to share oil supplies during a shortfall. During activation of the International Energy Agency's (IEA) Sharing System or tests of this system, the DOE is responsible, among other duties for soliciting, verifying, and transmitting these offers to the IEA.

Status: This system was utilized in AST-5 with positive results.

Literature Search System (LSS)

Description: The LSS is designed to keep track of the reference material on energy system vulnerability. This includes books, periodicals, notes, phone conversations, meeting minutes, etc. The LSS allows retrieval by keywords, as well as other criteria, such that relevant literature can be quickly identified for personnel doing studies or answering questions in this area. The system is generically designed to allow it to be used to track reference material in other areas.

Status: The LSS in operational on the EIA mainframe computer. Data preparation and entry are performed using IBM Displaywriters. A number of improvements and enhancements have been identified to make the system more efficient and effective.

[2] AUTHORITY

Management initiative. All of these systems are based on data collected by EIA, other offices/agencies, and commercial databases. No data reporting requirements have been levied by OEE to support these systems.

[3] ACTIVATION AND USE

These ongoing systems. See the individual descriptions for the status.

[4] RESPONSIBILITIES

These systems are maintained by the Office of Energy Emergencies.

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DEPARTMENT OF ENERGY
INTERNATIONAL AFFAIRS AND ENERGY EMERGENCIES
OBJECT CLASSIFICATION
(In Thousands of Dollars)

Budget line item: Emergency Preparedness

89-0234-0-1-274		1985 Actual	1986 Estimate	1987 Estimate
	Personnel Compensation:			
11.1	Permanent positions.	$3,432	$3,224	$3,331
11.3	Other than full-time permanent . . .	68	60	70
11.5	Other personnel compensation	41	40	40
	Total personnel compensation	$3,541	$3,324	$3,441
	Personnel Benefits:			
12.1	Civilian	$ 346	$ 330	$ 323
21.0	Travel and transportation of persons.	150	150	150
22.0	Transportation of things	18	40	20
23.2	Communications, utilities, and other rent	554	613	711
24.0	Printing and reproduction.	56	52	62
25.0	Other services	1,323	1,181	1,263
26.0	Supplies and materials	57	60	74
	Total obligations.	$6,045	$5,750	$6,044

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DEPARTMENT OF ENERGY

FISCAL YEAR 1987 CONGRESSIONAL BUDGET REQUEST

ENERGY REGULATION

VOLUME 7

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DEPARTMENT OF ENERGY

Proposed Appropriated Language

Economic Regulation

For necessary expenses in carrying out the activities of the Economic Regulatory Administration and the Office of Hearings and Appeals, [$24,623,000] $21,850,000. (Department of the Interior and Related Agencies Appropriations Act, 1986, as included in Public Law 99-190.)

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DEPARTMENT OF ENERGY

FISCAL YEAR 1987 CONGRESSIONAL BUDGET REQUEST

SUMMARY OF ESTIMATES BY APPROPRIATION BY MAJOR ACTIVITY

ENERGY REGULATION

BUDGET AUTHORITY IN THOUSANDS OF DOLLARS

	FY 1985 Actual	FY 1986 Estimate	FY 1987 Request
Fuels Conversion	$ 1,273	$ 1,142	---
Compliance	17,442	14,281	13,685
Petroleum Operations	2,041	2,079	2,060
Program Administration	1,141	646	1,105
Office of Hearings and Appeals	5,242	5,275	5,000
Total, Energy Regulation	$27,139	$23,423	$21,850

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
PROGRAM OVERVIEW

ECONOMIC REGULATORY ADMINISTRATION

In FY 1987, the Economic Regulatory Administration (ERA) program goals include the resolution of remaining enforcement cases involving alleged violations of the Emergency Petroleum Allocation Act of 1973 (EPAA); the authorization of natural gas imports and exports; and the authorization of electricity exports and construction and operation of electric transmission facilities at international borders.

During FY 1986, the following objectives are projected to be met:

- Completion of the review and analysis of all audits and the issuance of Proposed Remedial Orders (PRO) to those firms with alleged pricing violations.
- Litigation of alleged EPAA violations in administrative and judicial forums in approximately 400 cases.
- Negotiating settlements of unresolved enforcement matters with approximately 45-65 firms, including 3 major refiners.
- Processing of 27 natural gas import applications.
- Processing of 4 electricity export applications and 6 facility construction permits.
- Issuance of 7 final powerplant conversion orders to electric utilities and processing of 70 exemption requests.

During FY 1987, the following objectives are targeted:

- Continue administrative and judicial litigation of unresolved EPAA enforcement matters, projected to involve approximately 275 firms.
- Negotiate settlements with as many firms as possible with unresolved enforcement matters.
- Continuation of the natural gas and electricity program activities.

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
LEAD TABLE
OPERATING EXPENSES
ECONOMIC REGULATORY ADMINISTRATION
(Dollars in thousands)

	FY 1985 Appropriation	FY 1986	FY 1987 Base	FY 1987 Request	Request vs Base
Compliance.....	$17,442 1/	$14,281	$14,281	$13,685	- 596
Fuels Conversion.....	1,273	1,142	1,142	0	-1,142
Natural Gas and Electricity Operations.	2,041	2,079	2,079	2,060	- 19
Program Administration...	1,141	646	646	1,105	+ 459
Total Operating Expenses.	$21,897	$18,148	$18,148	$16,850	-1,298
Staffing Total FTEs.....	295	250	250	206	- 44

1/ Comparability adjustment for transfer-in of Office of General Counsel Enforcement personnel is $2,499.

Authorization: P.L. 92-210 P.L. 93-319 P.L. 94-385 P.L. 95-619 P.L. 66-280
P.L. 93-159 P.L. 94-99 P.L. 95-91 P.L. 95-620
P.L. 93-275 P.L. 94-163 P.L. 95-617 P.L. 95-621

The Economic Regulatory Administration operates its programs under the authority of several sections of the aforementioned public laws.

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Department of Energy

FY 1987 Congressional Budget Request

Adjustments to FY 1986 Appropriations

	FY 1986 Conference	General Reduction	Gramm-Rudman-Hollings Reduction	Adj. Approp. Total
Economic Regulatory Administration				
Compliance	$ 15,012	$ -90	$ -641	$14,281
Natural Gas and Electricity Operations	2,186	-13	-94	2,079
Fuels Conversion	1,200	-7	-51	1,142
Program Administration	680	-5	-29	646
Subtotal, Economic Regulatory Administration	$ 19,078	$ -115	$ -815	$18,148
General Reduction	-115	+115		
Total, Economic Regulatory Administration	$ 18,963	$ --	$ -815	$18,148

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
SUMMARY OF CHANGES
ECONOMIC REGULATORY ADMINISTRATION
(Dollars in thousands)

FY 1986/FY 1987 Base	$18,148
Program Increases and Decreases:	
o Reduction in Compliance program caseload in FY 1987	- 896
o Increase in severance cost for Compliance personnel	+ 300
o Termination of Fuels Conversion program	- 1,142
o Increase in severance cost in Program Administration	+ 450
o Net decrease in other program costs	- 10
FY 1987 Budget Request	$16,850

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NARRATIVE JUSTIFICATION

	FY 1986	FY 1987 Request
Compliance.....	$14,281	$13,685

The FY 1987 budget request is $13,685,000, a decrease of $596,000 from FY 1986. This decrease is attributable to a reduction in the program's caseload, offset by costs associated with expected personnel reductions.

The Compliance program is responsible for all program activities related to the enforcement of the petroleum pricing and allocation regulations issued under the EPAA. During FY 1987, enforcement of the program will be dedicated to the litigation of approximately 275 cases estimated to be still active either in administrative litigation before the Department's Office of Hearings and Appeals (OHA) and the Federal Energy Regulatory Commission (FERC) or in judicial litigation before the federal courts. These cases stem from audits conducted of major oil company and other petroleum firms from the period of price controls through mid-fiscal year 1986.

The program objectives in FY 1987 are to litigate all pending cases, with the goal of achieving resolution through court decisions or negotiated settlements on a third to half of the case inventory. The completion of all program audit work will permit the complete attention of all audit and paralegal personnel to the task of litigation support. By virtue of this dedication of resources to case resolution, the conduct of litigation and settlements will be performed with maximum effectiveness. These remaining cases are expected to result in as much as $2.5 billion in recoveries.

Because of the value of these pending cases, it is necessary to maintain a staff of experienced attorneys and highly specialized support personnel, including auditors, paralegals, and computer technicians to handle the large workload in a responsible manner. This staff will continue to face talented and skilled litigation opponents used by the petroleum firms in contesting the government's cases. During FY 1987, it is anticipated that a number of these cases will enter crucial litigation phases, and the enforcement staff must be sufficiently experienced and funded to properly represent the interests of the Department on behalf of the public.

Settlement of cases in litigation will continue to be the Department's preferred method of case resolution, in instances where negotiated agreements can be reached consistent with the public interest. However, experience has demonstrated that successful settlement activity is enhanced by purposeful and skilled litigation.

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Compliance (continued)

A portion of the staff will be devoted to monitor post-resolution compliance with final enforcement orders, including the pursuit of companies found to be delinquent in payments to the DOE escrow fund. Staff is also needed to provide assistance to ONA in identifying customers whose injury from overcharges entitles them to restitution from funds collected by DOE.

As a result of the dedicated litigation and settlement activity planned during the year, the inventory of remaining cases is estimated to be reduced substantially by the end of FY 1987, perhaps to 100-175 cases.

The FTE allowance for Compliance is 170. Of these, approximately 150 will be utilized for litigation and litigation support (including approximately 75 attorneys), 15 for non-litigation program activities, including audits and compliance monitoring, and 5 for management. This personnel level provides one attorney for approximately four cases--a ratio more than adequate for effective program management.

The budget request includes $8,345,000 for salaries and benefits, $400,000 for travel, $3,340,000 for overhead costs, $1,300,000 for contracted litigation support services, and $300,000 for severance costs for field personnel.

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
ECONOMIC REGULATORY ADMINISTRATION

KEY ACTIVITY SUMMARY
COMPLIANCE

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Litigation	Conducted judicial and administrative litigation in approximately 475 cases. Negotiated settlements with 53 firms to resolve outstanding cases. ($13.2 million, including $1.5 million for contracts for litigation support).	Conduct judicial and administrative litigation in approximately 400 cases. Negotiate settlements with as many firms as possible (targeted at 45-65 firms). ($12.4 million, including $1.4 million for contracts for litigation support).	Conduct judicial and administrative litigation in approximately 275 cases. Negotiate settlements with as many firms as possible (targeted at 30-60 firms). ($12.2 million, including $1.3 million for contracts for litigation support).
Non-Litigation	Completed audits and issue PROs to 50 firms. Completed investigations of cases where willfull violations are suspected and refer approximately 18 such cases to DOJ. Monitor compliance with approximately 300 final remedial and consent orders and institute enforcement action in federal district court where non-compliance has occurred. ($3.8 million).	Complete audits of all remaining firms and issue PROs as appropriate. As requested by DOJ, provide support for prosecutions of willful violation cases. Monitor compliance with approximately 200 final orders and take enforcement action, as appropriate. ($1.5 million).	Monitor compliance with approximately 150 final orders and take enforcement action, as appropriate. ($1.1 million).
Management	Provide overall program and policy direction to enforcement activities. ($0.4 million).	Provide overall program and policy direction to enforcement activities. ($0.4 million).	Provide overall program and policy direction to enforcement activities. ($0.4 million).

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NARRATIVE JUSTIFICATION

	FY 1986	FY 1987 Request
Fuels Conversion.....	$ 1,142	$ 0

The FY 1987 budget request does not include funding for the Fuels Conversion program and is premised upon repeal of the Powerplant and Industrial Fuel Use Act prior to FY 1987.

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
ECONOMIC REGULATORY ADMINISTRATION

KEY ACTIVITY SUMMARY
FUELS CONVERSION

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Fuels Conversion Program	Issued 3 final conversion orders and processed 70 exemption requests; monitored achievement of utility natural gas conservation programs; reported to Congress. ($1.3 million).	Issue 7 final conversion orders and process 70 exemption requests; monitor achievement of utility natural gas conservation programs; report to Congress. ($1.1 million).	None, premised upon repeal of the Powerplant and Industrial Fuel Use Act prior to FY 1987.

NARRATIVE JUSTIFICATION

	FY 1986	FY 1987 Request
Natural Gas and Electricity Operations	$ 2,079	$ 2,060

The FY 1987 budget request is $2,060,000, a decrease of $19,000 from FY 1986.

The goals of the Natural Gas and Electricity Operations activities are to manage the regulatory review of natural gas imports, and to authorize exports of electricity and construction and operation of electric power transmission facilities at international borders, consistent with the public interest.

The natural gas activity is authorized and required by Section 3 of the Natural Gas Act, Titles III and IV of the Natural Gas Policy Act, and Sections 402, 403 and 405 of the DOE Organization Act. Applications to import and export natural gas are evaluated and approved when in the public interest. The Department of Energy's policy is to approve import/export arrangements that are buyer-seller negotiated and that provide supplemental supplies of gas at market-competitive prices. In FY 1986, the agency plans to complete proceedings and issue orders on 27 of 56 import applications. The FY 1987 workload is projected to include 19 new applications along with 22 carried over from FY 1986 -- for a caseload of 41. The number of cases remains at this level because of the increased number of import applications for spot and short-term sales anticipated as market competition increases. The agency will also continue to provide technical support for international consultations on natural gas trade. The natural gas activity will require 21 FTEs for FY 1987.

The electricity import/export activity is authorized and required by Section 202(e) and (f) of the Federal Power Act and Executive Order 10485. Applications to export electricity are assessed for impact on sufficiency of the U.S. electric power supply, and facility permit applications are reviewed for environmental and system reliability consequences. During FY 1986, four electricity exports are expected to be authorized and six permits for facility construction processed one of which will be fully completed. While the number of cases is expected to remain the same for FY 1987, it is anticipated that they will be more complex with larger volumes and physical structures involved. Some increase in generic analytical activity is also anticipated as import volumes increase. The agency will continue to monitor and analyze electricity import/export activity and publish an annual report on the exchanges that take place. Technical and analytical support will also be provided for bilateral discussions on electricity trade. The electricity activity will require five FTEs as well as $250,000 in contract support for FY 1987. Contract funds will be used primarily for environmental impact studies to comply with the National Environmental Policy Act; some contract funds will be used for reliability and other studies, mostly in support of the licensing activity.

In addition to the contract support, the request includes $1,285,000 for salaries and benefits, $10,000 for travel, and $515,000 for overhead costs. The 26 FTE allowance is approximately the same personnel level as provided in FY 1986 and is consistent with the projected workload.

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DEPARTMENT OF ENERGY
FY 1986 CONGRESSIONAL BUDGET REQUEST
ECONOMIC REGULATORY ADMINISTRATION

KEY ACTIVITY SUMMARY
NATURAL GAS AND ELECTRICITY OPERATIONS

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Natural Gas Program	Processed 34 import applications; provided technical support for consultations with U. S. trading partners; participate in FERC proceedings. ($1.5 million, including $0.3 million for contracts for environmental impact statements and reliability assessments).	Process 27 import applications; provide technical support for consultations with U. S. trading partners; participate in FERC proceedings. ($1.5 million, including $0.3 million for contracts for environmental impact statements and reliability assessments).	Process 33 import applications; provide technical support for consultations with U. S. trading partners; participate in FERC proceedings. ($1.5 million, including $0.3 million for contracts for environmental impact statements and reliability assessments).
Electricity Program	Process 3 electricity export applications and 3 facility construction permits. ($0.6 million).	Process 4 electricity export applications and 6 facility construction permits. ($0.6 million).	Process 4 electricity export applications and 5 facility construction permits. ($0.6 million).

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NARRATIVE JUSTIFICATION

	FY 1986	FY 1987 Request
Program Administration	$ 646	$ 1,105

The FY 1987 budget request is $1,105,000, an increase of $459,000 over FY 1986. This increase is attributable to costs associated with expected personnel reductions.

The goal of this activity is to provide management and administrative support for ERA programs. The major objectives are to assure proper administration and management of the Natural Gas and Electricity Operations and Compliance programs and to provide personnel, travel, budget, and other administrative support. This activity currently includes the Office of the Administrator and the Office of Administration and Financial Management.

In FY 1987, the Program Administration staff will process and maintain personnel and organizational documents; prepare budget submissions and expenditure reports; allocate and monitor all aspects of budget execution; coordinate regional personnel and funding actions; control and respond to Congressional and public correspondence, and; act as liaison with various administrative and financial offices within the Department.

The FY 1987 request provides for pay and benefit costs of $495,000 for 10 FTEs, $15,000 for travel, $145,000 for overhead costs, and $450,000 for severance costs for headquarters personnel.

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
OBJECT CLASS
FY 1987 BASE AND FY 1987 ESTIMATE
ECONOMIC REGULATORY ADMINISTRATION

COMPLIANCE

		FY 1987 Base		FY 1987 Estimate		Increase (+) or Decrease (-)	
		FTE	Amount	FTE	Amount	FTE	Amount
Direct Obligations:							
11.0	Personnel compensation						
11.1	Full-time permanent		8,375		7,470		- 905
11.5	Other personnel compensation		60		50		- 10
11.9	Total personnel compensation	200	8,435	170	7,520	-30	- 915
12.1	Personnel benefits		931		825		- 106
13.0	Benefits to former personnel		0		300		+ 300
21.1	Travel and transportation persons		400		400		0
22.0	Transportation of things		60		50		- 10
23.0	Communications, utilities, rents.		2,200		2,500		+ 300
24.0	Printing and reproduction		205		210		+ 5
25.0	Other		1,925		1,750		- 175
26.0	Supplies and materials		125		130		+ 5
	Total direct obligations	200	14,281	170	13,685	-30	- 596

NOTE: The object class distribution reflects the allocation of resources presented in the fiscal 1987 congressional justification. Some estimates may differ from those shown in the budget appendix due to technical adjustments made subsequent to the submission of the appendix.

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
OBJECT CLASS
FY 1987 BASE AND FY 1987 ESTIMATE
ECONOMIC REGULATORY ADMINISTRATION

FUELS CONVERSION

		FY 1987 Base		FY 1987 Estimate		Increase (+) or Decrease (-)	
		FTE	Amount	FTE	Amount	FTE	Amount
Direct Obligations:							
11.0	Personnel compensation						
11.1	Full-time permanent.....		580		0		- 580
11.5	Other personnel compensation..		15		0		- 15
11.9	Total personnel compensation...	12	595	0	0	-12	- 595
12.1	Personnel benefits.....		70		0		- 70
21.1	Travel and transportation persons		12		0		- 12
23.6	Communications, utilities, rents.		195		0		- 195
24.0	Printing and reproduction		10		0		- 10
25.0	Other.....		250		0		- 25
26.0	Supplies and materials		10		0		- 10
	Total direct obligations....	12	1,142	0	0	-12	-1,142

NOTE: The object class distribution reflects the allocation of resources presented in the fiscal 1987 congressional justification. Some estimates may differ from those shown in the budget appendix due to technical adjustments made subsequent to the submission of the appendix.

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
OBJECT CLASS
FY 1987 BASE AND FY 1987 ESTIMATE
ECONOMIC REGULATORY ADMINISTRATION

NATURAL GAS AND ELECTRICITY OPERATIONS

		FY 1987 Base		FY 1987 Estimate		Increase (+) or Decrease (-)	
		FTE	Amount	FTE	Amount	FTE	Amount
Direct Obligations:							
11.0	Personnel compensation						
11.1	Full-time permanent.....		1,200		1,150		- 50
11.5	Other personnel compensation..		10		10		0
11.9	Total personnel compensation...	28	1,210	26	1,160	-2	- 50
12.1	Personnel benefits.....		134		125		- 9
21.1	Travel and transportation persons		10		10		0
23.0	Communications, utilities, rents.		350		385		+ 35
24.0	Printing and reproduction		33		35		+ 2
25.0	Other.....		320		320		0
26.0	Supplies and materials		22		25		+ 3
	Total direct obligations....	28	2,079	26	2,060	-2	- 19

NOTE: The object class distribution reflects the allocation of resources presented in the fiscal 1987 congressional justification. Some estimates may differ from those shown in the budget appendix due to technical adjustments made subsequent to the submission of the appendix.

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FY 1987 CONGRESSIONAL BUDGET REQUEST
OBJECT CLASS
FY 1987 BASE AND FY 1987 ESTIMATE
ECONOMIC REGULATORY ADMINISTRATION

PROGRAM ADMINISTRATION

		FY 1987 Base		FY 1987 Estimate		Increase (+) or Decrease (-)	
		FTE	Amount	FTE	Amount	FTE	Amount
Direct Obligations:							
11.0	Personnel compensation						
11.1	Full-time permanent.....		433		438		+ 5
11.5	Other personnnel compensation..		8		8		0
11.9	Total personnel compensation...	10	441	10	446	0	+ 5
12.1	Personnel benefits.....		48		49		+ 1
13.0	Benefits for former employees....		0		450		+ 450
21.1	Travel and transportation persons		20		15		- 5
23.0	Communications, utilities, rents.		105		112		+ 7
24.0	Printing and reproduction		8		9		+ 1
25.0	Other.....		15		15		0
26.0	Supplies and materials		9		10		0
	Total direct obligations....	10	646	10	1,105	0	+ 459

NOTE: The object class distribution reflects the allocation of resources presented in the fiscal 1987 congressional justification. Some estimates may differ from those shown in the budget appendix due to technical adjustments made subsequent to the submission of the appendix.

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
OBJECT CLASS
FISCAL YEARS 1985 THROUGH 1987
ECONOMIC REGULATORY ADMINISTRATION

COMPLIANCE

		FY 1985 Actual	FY 1986 Estimate	FY 1987 Estimate
Direct Obligations:				
11.0	Personnel compensation			
11.1	Full-time permanent	10,478	8,375	7,470
11.5	Other personnel compensation	84	60	50
11.9	Total personnel compensation	10,562	8,435	7,520
12.1	Personnel benefits	1,146	931	825
13.0	Benefits to former personnel	0	0	300
21.1	Travel and transportation of persons.	424	400	400
22.0	Transportation of things	61	60	50
23.0	Communications, utilities, and rents.	2,657	2,200	2,500
24.0	Printing and reproduction	183	205	210
25.0	Other	2,292	1,925	1,750
26.0	Supplies and materials	117	125	130
	Total direct obligations	17,442	14,281	13,685

NOTE: The object class distribution reflects the allocation of resources presented in the fiscal 1987 congressional justification. Some estimates may differ from those shown in the budget appendix due to technical adjustments made subsequent to the submission of the appendix.

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
OBJECT CLASS
FISCAL YEARS 1985 THROUGH 1987
ECONOMIC REGULATORY ADMINISTRATION

FUELS CONVERSION

		FY 1985 Actual	FY 1986 Estimate	FY 1987 Estimate
Direct Obligations:				
11.0	Personnel compensation			
11.1	Full-time permanent	688	580	0
11.5	Other personnel compensation	21	15	0
11.9	Total personnel compensation	709	595	0
12.1	Personnel benefits	79	70	0
21.1	Travel and transportation of persons	12	12	0
23.0	Communications, utilities, and rents	171	195	0
24.0	Printing and reproduction	8	10	0
25.0	Other	286	250	0
26.0	Supplies and materials	8	10	0
	Total direct obligations	1,273	1,142	0

NOTE: The object class distribution reflects the allocation of resources presented in the fiscal 1987 congressional justification. Some estimates may differ from those shown in the budget appendix due to technical adjustments made subsequent to the submission of the appendix.

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
OBJECT CLASS
FISCAL YEARS 1985 THROUGH 1987
ECONOMIC REGULATORY ADMINISTRATION

NATURAL GAS AND ELECTRICITY OPERATIONS

		FY 1985 Actual	FY 1986 Estimate	FY 1987 Estimate
Direct Obligations:				
11.0	Personnel compensation			
11.1	Full-time permanent	1,129	1,200	1,150
11.5	Other personnel compensation	9	10	10
11.9	Total personnel compensation	1,138	1,210	1,160
12.1	Personnel benefits	126	134	125
21.1	Travel and transportation of persons	11	10	10
23.0	Communications, utilities, and rents	334	350	385
24.0	Printing and reproduction	26	33	35
25.0	Other	388	320	320
26.0	Supplies and materials	18	22	25
	Total direct obligations	2,041	2,079	2,060

NOTE: The object class distribution reflects the allocation of resources presented in the fiscal 1987 congressional justification. Some estimates may differ from those shown in the budget appendix due to technical adjustments made subsequent to the submission of the appendix.

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
OBJECT CLASS
FISCAL YEARS 1985 THROUGH 1987
ECONOMIC REGULATORY ADMINISTRATION

PROGRAM ADMINISTRATION

		FY 1985 Actual	FY 1986 Estimate	FY 1987 Estimate
Direct Obligations:				
11.0	Personnel compensation			
11.1	Full-time permanent	466	433	438
11.5	Other personnel compensation	P	8	8
11.9	Total personnel compensation	474	441	446
12.1	Personnel benefits	52	48	49
13.0	Benefits to former personnel	457	0	450
21.1	Travel and transportation of persons	21	20	15
23.0	Communications, utilities, and rents	101	105	112
24.0	Printing and reproduction	7	8	9
25.0	Other	21	15	15
26.0	Supplies and materials	8	9	10
	Total direct obligations	1,141	646	1,105

NOTE: The object class distribution reflects the allocation of resources presented in the fiscal 1987 congressional justification. Some estimates may differ from those shown in the budget appendix due to technical adjustments made subsequent to the submission of the appendix.

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
FY 1987 CONTRACT LISTING
ECONOMIC REGULATORY ADMINISTRATION
(In thousands of dollars)

Compliance	Estimated Amount
Litigation support, including document discovery, indexing, filing, research, analysis, and data base development	$ 1,300
Natural Gas and Electricity Operation	
Preparation of environmental impact statements and reliability assessments for proposed electric transmission facilities crossing international borders	250

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
SUMMARY OF SUPPORT REQUIRED FROM EIA
ECONOMIC REGULATORY ADMINISTRATION
(In thousands of dollars)

	FY 1985	FY 1986	FY 1987
Compliance			
Case tracking and audit support.....	0	$ 210	$ 210

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
APPROPRIATIONS/FTEs/ACCOMPLISHMENTS FY 1985 THRU FY 1987
ECONOMIC REGULATORY ADMINISTRATION
(Dollar amounts in thousands)

	Actual FY 1985	Est. FY 1986	Est. FY 1987
Compliance			
o Appropriation	$17,442	$14,281	$13,685
o Full-time Equivalents	242	200	170
o Major Refiner PROs Issued	16	1-3	0
o Non-Major Refiner PROs Issued	42	10-20	0
o Negotiated Settlements (Firms)	53	45-65	30-60
o Administrative Litigation (Cases)	275	225	150
o Judicial Litigation (Cases)	200	175	125
o Special Investigation Referrals to DOJ	18	0	0
o Monitor Remedial and Consent Orders	300	200	150
Fuels Conversion			
o Appropriation	$ 1,273	$ 1,142	$ 0 1/
o Full-time Equivalents	15	12	0 1/
o Prohibition Orders Completed	3	7	0 1/
o Exemptions Processed	70	70	0 1/
Natural Gas and Electricity Operations			
o Appropriation	$ 2,041	$ 2,079	$ 2,060
o Full-time Equivalents	27	28	26
o Gas Import Applications Completed	34	27	33
o Electricity Export Applications	3	4	4
o Presidential Permits Processed	3	6	5
Program Administration			
o Appropriation	$ 1,141	$ 646	$ 1,105
o Full-time Equivalents	11	10	10
Total Appropriation	$21,897	$18,148	$16,850
Total Full-time Equivalents	298	250	206

1/ Assumes repeal of the prohibitions in the Fuel Use Act on the use of oil and gas in new powerplants and industrial facilities by year end FY 1986.

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
PROGRAM OVERVIEW

OFFICE OF HEARINGS AND APPEALS

The goal of the Office is to promote the lawful and equitable operation of the DOE programs by expeditiously processing and resolving petitions for regulatory or other relief. The Office is responsible for all of the Department's adjudicatory processes -- other than those administered by the Federal Energy Regulatory Commission or the Board of Contract Appeals -- and therefore reviews and decides exception applications from individual firms or persons who believe that a DOE-issued rule, regulation, or order causes a serious hardship, gross inequity, or an unfair distribution of burdens. The Office is also responsible for deciding final appeals in adjudicatory matters under the jurisdiction of the Secretary and for providing an adjudicatory forum in enforcement matters to consider contested issues of fact and law prior to the issuance of a Remedial Order. Additionally, the Office is increasingly involved in administering refund proceedings governed by the DOE regulations at 10 C.F.R. Part 205, Subpart V. A refund proceeding is initiated by the filing by ERA of a Subpart V petition, which requests OHA to establish procedures for the distribution to injured parties of funds obtained as a result of petroleum enforcement and settlement actions.

FY 1986 projected accomplishments:

- Resolve 156 compliance and related cases and 298 non-compliance filings.
- Continue to formulate and implement procedures and standards governing Subpart V overcharge refund proceedings.
- Process refund applications and distribute funds involved in existing Subpart V proceedings.

Specific objectives for FY 1987 to 1990, formulated in response to Public Laws, are:

- Complete and close all compliance matters expeditiously.
- OHA estimates that during each year beginning with FY 1986 it may receive between 400 and 700 petitions related to the Freedom of Information Act, the Privacy Act, the information requirements of the Energy Information

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Administration, and petitions for private grievance or redress. The bulk of these submissions is subject to processing time limitations and other requirements which specify priority treatment.

OHA anticipates that it may be asked in FY 1987 to administer refund proceedings involving the distribution of between $1,400,000,000 and $3,700,000,000 in additional monies obtained as a result of petroleum enforcement and settlement actions. The distribution of these refund monies, however, and the processing of a projected 175,000 to 200,000 applications, is subject to the outcome of court decisions in pending DOE enforcement actions and possible legislation.

Accomplishment of these objectives will help provide for the termination of matters pertaining to the prior DOE regulatory programs. It also will provide for the resolution of complex issues involving the distribution of large sums of money among claimants who include energy producers, consumers, the U.S. government and other governmental entities.

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
LEAD TABLE

OFFICE OF HEARINGS AND APPEALS - OPERATING EXPENSES
(Tabular dollars in thousands. Narrative material in whole dollars.)

	FY 1985 Appropriation	FY 1986 Adjusted	FY 1987 Base	FY 1987 Request	Request vs Base
Total:					
Operating Expenses:	$5,242	$5,275	$5,275	$5,000	$-275
Staffing (Total FTE):	82 1/	90	90	84	- 6

AUTHORIZATIONS: Sections 503, 504(a), P.L. 95-91; Section 21, P.L. 93-275; Section 104, P.L. 94-385; Section 5, P.L. 93-159; Section 207, P.L. 92-210; P.L. 89-554; P.L. 93-579.

1/ Reflects actual FTE usage in FY 1985.

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Department of Energy

FY 1987 Congressional Budget Request

Adjustments to FY 1986 Appropriations

	FY 1986 Conference	General Reduction	Gramm-Rudman-Hollings Reduction	Adj. Approp. Total
Office of Hearings and Appeals				
Hearings and Appeals	$5,545	$ -33	$ -237	$5,275
Subtotal, Office of Hearings and Appeals	5,545	-33	-237	5,275
General Reduction	-33	+33	--	--
Total, Office of Hearings and Appeals	$5,512	$ --	$ -237	$5,275

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
SUMMARY OF CHANGES
(in thousands of dollars)

OFFICE OF HEARINGS AND APPEALS

FY 1986	$5,275
Built in increases and decreases	0
FY 1987 base	5,275
Program increases and decreases:	
Reduction in staffing level	-275
FY 1987 Budget Request	$5,000

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
NARRATIVE JUSTIFICATION

OFFICE OF HEARINGS AND APPEALS

The FY 1987 budget request is for $5,000,000, which represents a $275,000 decrease from the adjusted appropriation for FY 1986. This request will provide for salaries and support for 84 full-time staff year equivalents (FTE), a decrease of ten FTE from FY 1985 staffing levels and six FTE from FY 1986 staffing levels. At this level of funding OHA believes that it will have sufficient resources to (1) adjudicate the compliance and related enforcement cases which commence when the Economic Regulatory Administration (ERA) issues a Proposed Remedial Order, (2) review and decide exception applications from individual firms or persons who believe that a DOE-issued rule, regulation, or order causes a serious hardship, gross inequity, or an unfair distribution of burdens, and (3) entertain final appeals in adjudicatory matters under the jurisdiction of the Secretary of Energy. During FY 1987, in addition to the above responsibilities, we will continue processing applications for refunds filed in proceedings instituted under Subpart V of the Department's procedural Regulations. As of year-end FY 1985, OHA had considered and resolved more than 14,760 of the approximately 17,450 applications for refund filed and, as a result, distributed refunds totalling over $77,000,000. Approximately $1,300,000,000 in refunds was awaiting distribution in existing Subpart V proceedings at that time.

On the basis of ERA projections of compliance and enforcement activity for FY 1986 and FY 1987, OHA projects receiving 120 new compliance-related petitions in FY 1986 and approximately 60 new compliance-related petitions in FY 1987. These enforcement and compliance-related cases raise many novel legal issues and represent the most complex, time-consuming and highly contested cases ever filed with OHA. Because of this level of difficulty, the average OHA productivity rate is .60 decision per analyst/attorney per month. OHA estimates that its beginning compliance-related inventory in FY 1987 will be 247 cases and, with a staffing level of 84 full-time staff

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year equivalents, that the inventory of unresolved compliance cases at the end of FY 1987 will total 154. In addition, OHA anticipates receiving approximately 200 non-compliance related cases in FY 1986 and 200 cases in FY 1987. Based on an estimated FY 1987 beginning inventory of 121 non-compliance cases, OHA estimates that its inventory of unresolved non-compliance related cases at fiscal year end will total 51. Thus, funding at this level will provide for the resolution of 423 compliance and non-compliance cases, and result in a case inventory decrease of approximately 44 percent. It will also enable OHA to continue processing refund applications in existing Subpart V proceedings.

The requested level of funding and accompanying staffing level of 84 FTEs are also necessary because OHA may be asked to distribute between $1,400,000,000 and $3,700,000,000 in additional overcharges recovered by the DOE. OHA's budget request represents a measured response to its known workload, as well as maintaining the capability for any increased responsibility this Office may be asked to undertake. OHA requests that it be funded at the requested level for FY 1987 in order to support its proposed level of staffing, meet acceptable processing times for petitions and applications in inventory, and continue processing its workload resulting from the distribution of refund monies pursuant to the DOE regulations at 10 C.F.R. Part 205, Subpart V.

In addition, the sequence of case processing of the Office is governed to an extent by statute and procedural rules which prescribe maximum processing times in certain proceedings such as Freedom of Information Act appeals, requests for stay and requests for temporary exception relief. In order to conform with these prescriptive time limitations, OHA is required to accord priority treatment to those petitions. Since most compliance-related cases do not carry this priority, any reduction in funding or personnel disproportionately affects these compliance cases and therefore frustrates the goal of terminating all matters related to the prior regulatory programs.

It should be noted that all OHA budget requests utilize workload data provided by the Economic Regulatory Administration. Any change in the projected level of activity for ERA for either FY 1986 or FY 1987 is likely to change OHA's rate of case receipts.

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
KEY ACTIVITY SUMMARY

OFFICE OF HEARINGS AND APPEALS

KEY ACTIVITY	ACTUAL ACTIVITIES DURING FY 1985	ESTIMATED ACTIVITIES DURING FY 1986	PLANNED ACTIVITIES DURING FY 1987
Compliance and related filings.	During FY 1985 OHA received 225 new compliance and related cases, and resolved 271 cases.	As of October 1, 1985, OHA had approximately 283 compliance and related cases in inventory. Using ERA projections, OHA expects to receive approximately 120 new filings in FY 1986. On the basis of regulatory processing requirements and average actual productivity rates, OHA expects to resolve 156 compliance and related cases during FY 1986 and have an inventory of 247 pending compliance cases on hand at fiscal year end.	Using ERA projections, OHA expects to receive 60 cases related to compliance actions during FY 1987. With the requested funding and staffing, 153 petitions should be resolved leaving 154 open compliance and related cases at the end of FY 1987.
Non-compliance filings.	During FY 1985 OHA resolved 574 non-compliance cases. This includes the issuance of 397 final decisions implementing Subpart V procedures to distribute refund monies within OHA's jurisdiction.	As of October 1, 1985, approximately 219 non-compliance cases were on hand and new receipts are projected to be approximately 200. Of these 419 cases, 296 are projected to be resolved during FY 1986. Thus approximately 121 of these cases would remain in inventory at the end of FY 1986.	An estimated 200 non-compliance cases are projected to be received for FY 1987, in addition to the open inventory of 121 cases remaining from FY 1986. It is expected that all except 51 of these cases would be resolved during the fiscal year.

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KEY ACTIVITY	ACTUAL ACTIVITIES DURING FY 1985	ESTIMATED ACTIVITIES DURING FY 1986	PLANNED ACTIVITIES DURING FY 1987
Subpart V applications.	During FY 1985 OHA processed over 1,900 applications, resulting in refunds of more than $27,600,000 to injured parties.	As of October 1, 1985, OHA had approximately 3,103 refund applications pending. The number of refund applications to be received during FY 1986 is directly related to the level of ERA settlement activity and the number of Subpart V petitions filed with OHA, and cannot be accurately estimated.	OHA will continue processing refund applications received as a result of Subpart V proceedings which it administers.

NOTE: Each OHA staff member works on matters relating to more than one of the above key activities. There is no way to estimate accurately, therefore, the amount of staff hours (and corresponding portions of OHA's budget) actually spent on each of OHA's various functions. Accordingly, it is not possible to calculate the estimated costs for each of the above key activities.

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
AMOUNTS AVAILABLE FOR OBLIGATION

OFFICE OF HEARINGS AND APPEALS
(In thousands of dollars)

	FY 1986	FY 1987
Appropriation	5,275	5,000
Proposed Supplementals:		
Pay Cost	--	--
Subtotal	5,275	5,000
Comparative Transfer To:	--	--
Comparative Transfer From:	--	--
Subtotal	--	--
Subtotal, Budget Authority	5,275	5,000
Receipts and Reimbursements:		
Unobligated Balances, Start of Year	--	--
Unobligated Balances, End of Year	--	--
Total, Obligations	5,275	5,000

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
ANALYSIS OF BUDGET BY OBJECT CLASS
APPROPRIATION
(in thousands of dollars)

OFFICE OF HEARINGS AND APPEALS

		FY 1985 (actual)	FY 1986 (estimate)	FY 1987 (estimate)
Direct Obligations:				
	Personnel compensation:			
11.1	Full-time permanent	3,032	2,943	2,785
11.3	Other than full time	270	262	248
11.5	Other personnel compensation	38	37	35
	Total personnel compensation	3,340	3,242	3,068
12.1	Personnel benefits: Civilian	379	368	349
21.0	Travel and transportation of persons	18	21	20
22.0	Transportation of things	22	32	30
23.0	Rent, communications, and utilities	578	946	898
24.0	Printing and reproduction	369	277	262
25.0	Other services	141	297	281
26.0	Supplies and materials	80	92	92
	Total, direct obligations	4,927	5,275	5,000

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
ANALYSIS OF BUDGET BY OBJECT CLASS
APPROPRIATION
(in thousands of dollars)

OFFICE OF HEARINGS AND APPEALS

		FY 1987 (base)		FY 1987 (estimate)		Increase (+) or Decrease (-)	
		FTE	Amount	FTE	Amount	FTE	Amount
Direct Obligations:							
Personnel compensation:							
11.1	Full-time permanent	86	2,943	82	2,785	-4	-158
11.3	Other than full time	4	262	2	248	-2	-14
11.5	Other personnel compensation		37		35		-2
	Total personnel compensation	90	3,242	84	3,068	-6	-174
12.1	Personnel benefits: Civilian		368		349		-19
21.0	Travel and transportation of persons		21		20		- 2
22.0	Transportation of things		32		30		- 2
23.0	Rent, communications, and utilities		946		898		-48
24.0	Printing and reproduction		277		262		-15
25.0	Other services		297		281		-16
26.0	Supplies and materials		92		92		0
	Total direct obligations		5,275		5,000		-275

NOTE: The above object class distributions reflect the allocation of resources presented in the fiscal year 1987 Congressional justification. Some estimates may differ from those shown in the budget appendix due to technical adjustments made subsequent to submission of the appendix.

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DEPARTMENT OF ENERGY
FY 1987 CONGRESSIONAL BUDGET REQUEST
SUMMARY OF SUPPORT REQUIRED FROM EIA
(in thousands of dollars)

PROGRAM	FY 1985	FY 1986	FY 1987
Office of Hearings and Appeals	$10	$12	$12
Total	$10	$12	$12

Narrative: In order to assist the Office of Hearings and Appeals (OHA) in the processing of its Subpart V refund proceedings, OHA occasionally requires from EIA historical data on volume and prices of covered product sold by a particular firm during a specified period, and a comparison of that data with national averages.

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DEPARTMENT OF ENERGY

FISCAL YEAR 1987 CONGRESSIONAL BUDGET REQUEST

ENERGY INFORMATION ACTIVITIES

VOLUME 7

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DEPARTMENT OF ENERGY

Proposed Appropriation Language

Energy Information Administration

For necessary expenses in carrying out the activities of the Energy Information Administration, [$60,682,000] $59,651,000. (Department of the Interior and Related Agencies Appropriations Act, 1986, as included in Public Law 99-109.)

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DEPARTMENT OF ENERGY

FISCAL YEAR 1987 CONGRESSIONAL BUDGET REQUEST

SUMMARY OF ESTIMATES BY APPROPRIATION BY MAJOR ACTIVITY

ENERGY INFORMATION ACTIVITIES

BUDGET AUTHORITY IN THOUSANDS OF DOLLARS

	FY 1985 Actual	FY 1986 Estimate	FY 1987 Request
National Energy Information System	$ 52,065	$ 50,001	$ 49,128
Policy and Management	8,854	7,723	10,523
Total, Energy Information Activities	$ 60,919	$ 57,724	$ 59,651

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DEPARTMENT OF ENERGY
FISCAL YEAR 1987 CONGRESSIONAL BUDGET REQUEST
AMOUNTS AVAILABLE FOR OBLIGATION
ENERGY INFORMATION
(In thousands of dollars)

	FY 1986	FY 1987
Appropriation	$57,724	$59,651
Proposed supplemental	0	0
Subtotal	$57,724	$59,651
RECEIPTS AND REIMBURSEMENTS		
Federal Energy Regulatory Commission	$ 4,663	$ 4,663
Strategic Petroleum Reserve	800	800
Policy, Safety, and Environment	163	163
Hearings and Appeals	10	35
Nuclear Energy	0	10
International Affairs and Energy Emergencies	260	350
Office of Civilian Radioactive Waste Management	1,015	1,024
Environmental Protection Agency	60	89
Department of Navy	60	60
U. S. Synfuels Corporation	3	0
Peace Corps	5	5
Bureau of Economic Analysis (Commerce)	2	2
Bureau of Land Management (Interior)	10	10
Social Security Administration	105	105
Total obligations	$64,880	$66,967

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DEPARTMENT OF ENERGY
FISCAL YEAR 1987 CONGRESSIONAL BUDGET REQUEST
PROGRAM OVERVIEW
ENERGY INFORMATION

The mission of the Energy Information Administration (EIA) is to produce meaningful, timely, and accurate energy information for decisionmakers within the Executive Branch, Congress, State Governments, industry, and the public. Information is provided for those who make decisions about energy in all sectors of the society so that they may make these decisions well. To accomplish this mission the EIA collects, processes, and integrates energy data, exercising independent judgment in the gathering, analysis, and dissemination of information, and serving as the preeminent source of, and reference standard for, national energy statistics and objective energy analysis.

This budget request of $59,651,000 and 455 full-time equivalent (FTE) staff years (plus 20 FTE reimbursed by the Federal Energy Regulatory Commission and 4 FTE funded by the Nuclear Waste Fund for a total of 479 FTE for EIA) recognizes constraints imposed by the budget deficit. The request is $440,000 and 6 FTE below the adjusted FY 1986 level (FY 1987 base). The request is divided into two decision units: 1) the National Energy Information System and 2) Policy and Management. Major program increases are requested in the amount of $500,000 in the National Energy Information System for EIA funding for the Uranium Industry Viability Assessment program, which was funded in previous years by Nuclear Energy, and $2,583,000 in Policy and Management for administrative support services provided by the Department. Several program decreases totalling $3,562,000 are proposed, including decreases in quality maintenance activities, modeling and analysis activities, computer equipment purchases, and publication and inquiry activities.

The following accomplishments are planned for FY 1986:

- Operate basic energy data collection programs to provide timely, integrated, and accessible data.
- Distribute various weekly, monthly, quarterly, annual, and one-time reports on energy statistics and forecasts.
- Prepare short- and intermediate-term energy supply and demand forecasts through FY 1995 for primary energy sources and sectors.
- Maintain short- and intermediate-term models and other analysis tools.
- Produce and publish the EIA Annual Energy Review, the Annual Energy Outlook, the International Energy Outlook, and the quarterly Short-Term Energy Outlook.
- Provide basic support to the Federal Energy Regulatory Commission (FERC) and the Office of Civilian Radioactive Waste Management on a reimbursable basis to allow their regulatory functions to be sustained.

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- Provide energy information services to satisfy the needs of other components of the Department.
- Provide data and analysis support to the Social Security Administration on a reimbursable basis to facilitate evaluation of the Low Income Home Energy Assistance Program.
- Provide the Executive Branch, Congress, State governments, industry and the public access to the National Energy Information System (NEIS) and respond to requests from the White House, Congress, and other Federal agencies for special reports as resources will allow.
- Conduct quality maintenance and audit activities.
- Field a manufacturing energy consumption survey.
- Begin implementation of the Nonresidential Buildings Energy Consumption Survey.
- Conduct an analysis of energy conservation in the residential sector for the General Accounting Office and the Senate Committee on Energy and Natural Resources.

Specific objectives for FY 1987 to FY 1990 are:

- Operate EIA basic data collection programs on traditional fuel sources.
- Continue to produce and distribute EIA energy information products on traditional fuel sources.
- Conduct surveys to measure the change in energy consumption and expenditure patterns in the residential, commercial, and manufacturing sectors of the economy.
- Produce short- and intermediate-term forecasts with accompanying analyses.
- Provide basic energy information support to other components of the Department, including the Federal Energy Regulatory Commission and the Office of Civilian Radioactive Waste Management on a reimbursable basis.
- Provide the Executive Branch, Congress, State governments, industry and the public access to the NEIS and respond to high priority requests from the White House, Congress, and other Federal agencies for special reports as resources will allow.
- Make necessary investments in quality maintenance activities and audits.
- Continue to manage EIA programs with minimum overhead.

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DEPARTMENT OF ENERGY
FISCAL YEAR 1987 CONGRESSIONAL BUDGET REQUEST
LEAD TABLE

ENERGY INFORMATION ADMINISTRATION

(Tabular dollars in thousands, narrative in whole dollars)

	FY 1985 Approp.	FY 1986 Approp.	FY 1987 Base	FY 1987 Request	Request vs. Base
National Energy Information System [1]					
Operating Expenses.....	$52,065 [2]	$50,001	$51,908	$49,128	- $2,780
Subtotal.....	$52,065	$50,001	$51,908	$49,128	- $2,780
Policy and Management					
Operating Expenses.....	$ 8,854	$ 7,723	$ 8,183	$10,523	+ $2,340
Subtotal.....	$ 8,854	$ 7,723	$ 8,183	$10,523	+ $2,340
TOTAL					
Operating Expenses.....	$60,919	$57,724	$60,091	$59,651	- $ 440
Total, Energy Information Administration (EIA).....	$60,919 [2]	$57,724	$60,091	$59,651	- $ 440
Staffing Total FTE:					
Direct [3].....	460 [4]	461	461	455	- 6
Reimbursable.....	20	20	20	20	

Authorization: P.L.'s 75-688, 93-319, 94-963, 94-385, 95-91, 95-619, 95-620, 95,621, 96-102, 96-294, 97-257, 97-415, and 16 U.S.C. 791a et. seq.

1/ The National Energy Information System decision unit was reported in previous years under two separate decision units -- 1) Collection, Production, and Analysis and 2) Program Services.

2/ Includes $263,000 deferral.

3/ Excludes 4 FTE funded by the Nuclear Waste Fund.

4/ Actual FY 1985 FTE.

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Department of Energy

FY 1987 Congressional Budget Request

Adjustments to FY 1986 Appropriations

	FY 1986 Conference	Total	Comparabilities	Total
Energy Information Administration				
National Energy Information System				
Operating Expenses:				
Oil and Gas	-	-	$12,267	$12,267
Coal, Nuclear, Electric and Alternate Fuels	-	-	3,912	3,912
Energy Markets & End Use	-	-	4,362	4,362
ADP Services	-	-	9,336	9,336
National Energy Information Center	-	-	733	733
Statistical Standards	-	-	879	879
Program Direction	-	-	18,512	18,512
Total, National Energy Information System (NEIS)	-	-	$50,001	$50,001
Operating	-	-	50,001	50,001

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Department of Energy

FY 1987 Congressional Budget Request

Adjustments to FY 1986 Appropriations

	FY 1986 Conference	General Reduction	G-R-H Reduction	Total
Energy Information Administration				
Policy & Management				
Operating Expenses:				
Program Direction	$7,544	$-45	$-217	$7,282
Program Support	575	- 4	-130	441
Subtotal, Policy and Management	$8,119	$-49	$-347	$7,723
General Reduction	-49	49	-	-
Total, Policy & Management	$8,070	-	$-347	$7,723
Operating	8,070	-	-347	7,723

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Summary of Changes
Energy Information Administration
Energy Information
(Dollars in thousands)

FY 1986 Appropriation enacted	$60,318
Balanced Budget and Emergency Deficit Control Act adjustment	- 2,594
FY 1986 Budget Authority	$57,724
Additional Pay Costs (Within Grades, Promotions, Increased Contributions to Retirement and Benefits)	+ 586
Contract, Travel, and Training Inflation	+ 1,676
Contract Award Fees	+ 105
FY 1987 Base	$60,091
Program Increases:	
Uranium Industry Viability Assessment	+ 500
Administrative Support Services Provided by HAA	+ 2,583
Program Direction, National Energy Information System	+ 39
Program Decreases:	
Petroleum Marketing Information	- 225
State Heating Oil Grants Program Funding	- 190
Coal Data and Analysis	- 240
Electric Power Data and Analysis	- 250
Uranium Data and Analysis	- 101
Financial Data and Analysis	- 365
Energy Consumption Information	- 420
State Energy Data System	- 95
Computer and Telecommunications Equipment	- 1,110
Computer Facilities Management	- 100
Publication and Microfilming Services	- 161
Statistical Support Services	- 62
Systems Integration Activities	- 155
Planning and Management	- 68
FY 1987 Request	$59,651

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Energy Information Administration
Energy Information
(Tabular dollars in thousands, narrative in whole dollars)

	FY 1985 Approp.	FY 1986 Approp.	FY 1987 Base	FY 1987 Request	Request vs. Base
National Energy Information System					
Operating expenses:					
Oil and Gas	$13,918	$12,267	$12,794	$12,379	-$ 415
Coal, Nuclear, Electric, and Alternate Fuels	6,244	3,912	4,080	3,989	- 91
Energy Markets and End Use	4,096	4,362	4,550	3,670	- 880
ADP Services	7,297	9,336	9,737	8,527	- 1,210
National Energy Information Center	771	733	765	604	- 161
Statistical Standards	255	879	917	855	- 62
Program Direction	19,484	18,512	19,065	19,104	+ 39
Total, National Energy Information System (NEIS)	$52,065	1/ $50,001	$51,908	$49,128	-$2,780
Staffing, NEIS FTE:					
Direct 2/	426	3/ 428	427	421	- 6
Reimbursable	20	20	20	20	

Authorization: P.L.'s 75-688, 93-319, 94-963, 94-385, 95-619, 95-620, 95-621, 96-102, 96-294, 97-415, 97-257, & 95-91, and 16 U.S.C. 791a et. seq.

1/ Includes $263,000 deferral.

2/ Excludes 4 FTE funded by the Nuclear Waste Fund.

3/ Actual FY 1985 FTE.

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Summary of Changes
National Energy Information System
(Dollars in thousands)

FY 1986 Appropriation Enacted	$52,248
Balanced Budget and Emergency Deficit Control Act adjustment	- 2,247
FY 1986 Budget Authority	$50,001
Within-Grades, Promotions, Awards, Increased Contribution to Retirement and Benefits	+ 545
Contract, Travel and Training Inflation	+ 1,408
Shift 1 FTE to Policy and Management (P&M)	- 46
FY 1987 Base	$51,908
Program Increases:	
Uranium Industry Viability Assessment	+ 500
Program Direction	+ 39
Program Decreases:	
Petroleum Marketing Information	- 225
State Heating Oil Grants Program Funding	- 190
Coal Data and Analysis	- 240
Electric Power Data and Analysis	- 250
Uranium Data and Analysis	- 101
Financial Reporting System	- 365
Energy Consumption Information	- 420
State Energy Data System	- 95
Computer and Telecommunications Equipment	- 1,110
Computer Facilities Management	- 100
Publication and Microfilming Services	- 161
Statistical Support Services	- 62
FY 1987 Request	$49,128

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The National Energy Information System (NEIS) contains the operational elements of the EIA. The FY 1987 request is for $49,128,000 and 421 FTE plus 20 FTE reimbursed by the Federal Energy Regulatory Commission (FERC) and 4 FTE funded by the Office of Civilian Radioactive Waste Management. The request is $2,780,000 and 6 FTE below the FY 1986 adjusted level (FY 1987 base). Section 52(b) of the Federal Energy Administration Act of 1974 (FEA Act), P.L. 93-275, states that the "System shall contain such information as is required to provide a description of and facilitate analysis of energy supply and consumption within and affecting the United States...." The organization of the EIA especially addresses the needs of this mandate by a comprehensive treatment of energy information: energy data are collected, interpreted, and analyzed; their quality is evaluated and maintained; they are disseminated regularly to other parts of the Department of Energy, the Congress, other Executive Agencies, the States, and the public; they are stored, processed and published by state-of-the-art automated data processing hardware and software.

The NEIS decision unit is composed of: the Office of Oil and Gas, the Office of Coal, Nuclear, Electric and Alternate Fuels, the Office of Energy Markets and End Use, the Automatic Data Processing (ADP) Services Staff, the National Energy Information Center, and the Office of Statistical Standards. The information systems developed by these offices enable the EIA to exercise independent judgment in the gathering, interpretation and dissemination of energy related information. These offices also provide basic energy information services to support other Department of Energy offices and the FERC which are funded on a reimbursable basis.

The program activities of the EIA are mandated by Section 205 of the Department of Energy Organization Act (P.L. 95-91), which requires the creation of an independent agency as a central point within the Department for the gathering, analysis, and dissemination of energy information. These activities are also mandated by Section 52 of the FEA Act (mentioned above) which requires the creation of a comprehensive data base, the NEIS; by Section 13(a) of the FEA Act, which requires the collection of energy information to carry out the functions of the FEA Act; by Section 11 of the Energy Supply and Environmental Coordination Act; and by several other legislative authorities.

The Office of Oil and Gas conducts information programs concerning petroleum and natural gas reserves, production, refining, distribution, marketing and prices. This Office collects, processes, verifies, analyzes and prepares reports of information concerning these energy sources. The FY 1987 request for the Office of Oil and Gas is $12,379,000 and 151 FTE, a decrease of $415,000 and 5 FTE from the FY 1987 base level, and will result in the program reductions described below.

The major thrust of the Office's petroleum supply program is the regular collection and prompt publication of crude oil and petroleum product supply statistics. This program produces publications such as the Weekly Petroleum Status Report, the Petroleum Supply Monthly, the Petroleum Supply Annual, and provides input to several EIA integrated information products. This program also provides information access to energy analysts throughout the Department for their use in administering numerous programs which depend upon timely, comprehensive information. In FY 1987, most core activities

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will be maintained at the FY 1986 level. The Weekly Petroleum Status Report, providing regular information on the petroleum supply situation, will be maintained but follow-up quality assurance procedures will be curtailed. A three-year effort to develop automated data error dectection measures for the weekly and monthly surveys will be completed. Follow-up quality checks on certain other series (e.g., imports, unaccounted-for crude oil, refinery utilization and capacity) will be ended. These cutbacks will affect the quality of the data; however, they are not expected to have a major impact on the overall integrity of these EIA products.

The Office's reserves and natural gas program combines petroleum reserves and natural gas data gathering, analysis, and publication activities with major support services for the FERC. (All work for FERC is done on a reimbursable basis. No contract, computer or staffing funds are included in this request to support the FERC.) The program produces the U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves Annual Report, the Natural Gas Monthly, the Natural Gas Annual, and input into several integrated publications. Analyses examine critical aspects of the natural gas situation, and model results feed the EIA Annual Energy Outlook. In FY 1987, the Foreign Energy Supply Assessment Program will be cancelled, as will planned surveillance field studies. Analyses of the petroleum and natural gas markets will be continued, including completion of an updated natural gas supply analysis to reflect the changing regulatory environment. The Integrated Natural Gas Data Base will be completed.

The petroleum marketing program gathers, analyzes, and publishes information on crude oil and petroleum product sales, prices, and distribution in the Petroleum Marketing Monthly, the Petroleum Marketing Annual, and in EIA's integrated information publications. The program conducts market trend analyses concerning supply/price anomalies, and maintains a comprehensive integrated petroleum marketing universe and survey frame. In FY 1987, petroleum marketing activities will be scaled back by eliminating efforts to resolve frames coverage problems associated with diesel fuel, kerosene, and propane supplies, and by abandoning the effort to consolidate petroleum marketing data bases. The State heating oil grant program will not be funded.

The Office of Coal, Nuclear, Electric, and Alternate Fuels develops, operates and maintains the statistical and analytical information systems necessary to collect, process, and interpret data and conduct analysis and short- and intermediate-term forecasting activities in the respective fuel areas. These activities result in the production of statistical periodicals, technical reports, and analysis reports. This Office also provides major contract and staff support to the FERC and to the Office of Civilian Radioactive Waste Management on a reimbursable basis. The FY 1987 request for this office is $3,989,000 and 112 FTE, a decrease of $91,000 in contracts and 2 FTE from the FY 1987 base level, and will result in the program changes described below.

The coal program collects data and produces statistical reports, data interpretations, and analyses necessary for the publication of a basic series of publications; maintains continuity of historical data bases, and provides timely and relevant coal data and interpretation. It produces basic publications such as the Weekly Coal Report, the Coal Distribution Report, the Quarterly Coal Report and the Annual Coal Production Report.

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The Coal Supply and Transportation Model, the International Coal Trade Model, and the National Coal Model are the major tools for conducting analyses and preparing analysis reports in the areas of coal exports, coal supply, and coal transportation. In FY 1987, due to funding decreases, the publication of results from the quarterly survey of coal producers and distributors, which monitors coal production, stocks, and shipments, and the annual survey of coal mining operations, which monitors production, stocks, productive capacity, recoverable reserves, employment, and productivity will be somewhat less timely. There will be a reduction in coal model maintenance and data updates. Quality maintenance, particularly requirements analyses for existing data programs, will be deferred.

The electric power program produces statistics, analyses, and other information necessary for the publication of monthly, quarterly, annual, and one-time reports covering generation, capacity, stocks, receipts, sales, price, construction costs, bills, fuel consumption, and financial information in the electric power area. It also provides support to the FERC; the Department's Offices of Fossil Energy and Policy, Planning, and Analysis; the Department of Commerce's Bureau of Economic Analysis; and the Environmental Protection Agency on a reimbursable basis in their conduct of analytical and regulatory activities in the field of electric power. The electric power statistical publications include the Electric Power Monthly, the Electric Power Quarterly, the Electric Power Annual, Cost and Quality of Fuels for Electric Utility Plants, the Inventory of Power Plants in the United States, Typical Electric Bills, Financial Statistics of Selected Electric Utilities, and Historical Plant Cost and Annual Production Expenses for Selected Electric Plants. Reductions in FY 1987 will cause deferrals in quality maintenance and analysis activities.

The nuclear and alternate fuels program produces basic nuclear and alternate fuels statistics and information necessary for the publication of periodic timely analyses relevant to the issues under consideration by decisionmakers. This program maintains historical data series, including three nuclear energy data collections assumed from the Assistant Secretary for Nuclear Energy in September 1981. This program is also responsible for data gathering, analysis, and reporting related to Section 23 of P.L. 97-415. This Act requires annual monitoring of the viability of the domestic uranium industry through 1992. The Secretary has delegated responsibility to EIA for the data collection and analysis of this activity and the reporting of the results. The uranium viability assessment program will be funded by EIA beginning in FY 1987 and accounts for a program increase of $500,000. This activity was funded previously by the Department's Office of Nuclear Energy which transferred money to EIA for program implementation. In FY 1987, the alternate fuels program will be reduced to minimal monitoring of activities in this energy area. Nuclear fuel cycle analysis efforts will be limited below current levels.

This program also provides information gathering and analysis activities in support of the Department's efforts to implement the Nuclear Waste Policy Act of 1982 (P.L. 97-425). However, these activities are conducted on a reimbursable basis and do not affect EIA's budget request. These activities include collecting data from electric utilities operating nuclear power plants; analyzing such data as required by the Office of Civilian

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Radioactive Waste Management; verifying nuclear waste fund fee payments by utilities; implementing and maintaining a data base on spent nuclear fuel assemblies; and forecasting nuclear electricity generation, spent fuel discharges, and disposal requirements.

The Office of Energy Markets and End Use maintains energy statistical and analytical information systems concerning energy consumption and other subjects which cut across different energy sectors. This information is provided by data collection and processing and analyses and projections associated with energy end use, price, supply and demand balances, and economic, international, and financial matters. The FY 1987 request for the Office of Energy Markets and End Use is $3,670,000 and 96 FTE, a decrease of $880,000 in contracts and 3 FTE from the FY 1987 base level, and will require the program reductions described below.

The integrated energy information program produces basic data and energy forecasts which cut across all energy sources. The Monthly Energy Review presents key energy statistics on a monthly basis. Historical data from EIA reports and other sources are compiled in the Annual Energy Review. Energy forecasts are presented both in the quarterly Short Term Energy Outlook, which contains projections of world oil market and U.S. energy production, consumption, and prices for up to 18 months, and the Annual Energy Outlook, which provides an integrated forecast of energy production, consumption and prices. The capability to develop forecasts through the year 2000 is provided through the use of the Intermediate Future Forecasting System, the Oil Market Simulation model, and the Petroleum Allocation model. In FY 1987, most of the reports produced by this program will continue; however, the State Energy Data Report and the State Energy Price and Expenditures Report will be eliminated. Updating the energy models used for the data and analysis reports will be deferred, as will scheduled quality maintenance activities. Personal computer-based models will be used to reduce the need for direct access to commercial models such as DRI, Chase Econometric, and Wharton Econometric. EIA's annual support to Stanford University's Energy Modeling Forum will be discontinued.

Energy industry financial analysis is also performed by the Office of Energy Markets and End Use. In FY 1987 financial analyses based on publicly available energy industry performance information will be undertaken, while direct collection of Financial Reporting System information will not be done. The Financial Reporting System was proposed for elimination in the Congressional Reports Elimination Act of 1985 (S. 992) which is pending before Congress. Funds to conduct the Financial Reporting System in FY 1986 were added to EIA's FY 1986 Budget through the Continuing Resolution.

The international and contingency information program maintains basic energy data systems for speed and responsiveness to support international data collection and analysis and the contingency planning and emergency operations of the Department of Energy and related interagency groups. This includes production of the International Energy Annual and the International Energy Outlook, continuous monitoring of the international oil market, and the maintenance and documentation of all contingency planning models. In FY 1987 support to the Department's contingency analysis will be curtailed, but other activities will be continued.

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The energy end use information program carries out surveys of energy end use consumption in the residential, non-residential buildings, and industrial sectors on a triennial cycle that was begun in the FY 1986 budget. The FY 1987 budget requests funds for the Residential Energy Consumption Survey (RECS) which collects data on residential energy consumption and expenditures and on the characteristics of structures, households, and the stock of energy-using equipment. These data have been used extensively within the Department, by other Federal agencies, and the Congress for policy development and evaluation. For example, the RECS data are used by the Social Security Administration in implementing and evaluating the Low Income Home Energy Assistance Program and by the Bureau of Labor Statistics in adjusting the Consumer Price Index. These data have also been used by the Office of Management and Budget in analyzing the Low Income Weatherization Program, and by the General Accounting Office and the Congress for analyses of energy savings in the residential sector through conservation measures. Quality maintenance activities for the remaining surveys will be reduced in FY 1987.

The ADP Services Staff provides computer processing support services for EIA's and other Department components' energy information programs and for FERC regulatory programs. The FY 1987 request for ADP Services is $8,527,000 and 12 full time equivalent staff years, a decrease of $1,210,000 from the FY 1987 base level. This office operates a major computer facility consisting of a large-scale computer system, a nationwide telecommunications network, and systems software programs providing high level computer languages, data base management systems, and modeling, simulation, statistical processing, text editing, table processing, and graphics packages. This major data processing complex is accessible to users through a data communications network operating seven days a week, consisting of many computer terminals and remote job entry stations. In addition to the EIA funds requested, about $2,700,000 in reimbursables is estimated as needed to cover the total budget requirements for the EIA computer facility. In 1987, major external users of energy information computer support will be the FERC, the Strategic Petroleum Reserve Office, the Office of Civilian Radioactive Waste Management, and the Economic Regulatory Administration. Compared to FY 1986, the operation of the computer system will be sustained, but the schedule for some planned purchases of peripheral computer and telecommunications equipment, along with some terminal equipment purchases, will be altered. There also will be reductions to support provided by the facilities management contractor.

The National Energy Information Center performs final editorial and graphics preparation and public dissemination activities for all EIA information products. These activities are conducted to disseminate data publications, interpretive analysis reports, forecast reports, information directories, and public use tapes and microfiche. Dissemination also includes response to public inquiries. The FY 1987 request for this program is $604,000 and 22 FTE, a decrease of $161,000 from the FY 1987 base level and an increase of 2 FTE. The decreased funding level will result in reductions in the microfilming of EIA documents, publications support, and mail list maintenance. The increase of 2 FTE are for the implementation of a centralized reports preparation program using the EPIC/JANUS automated publication system.

The Office of Statistical Standards provides coherent and credible strategies across EIA for information collection, analysis, and forecasting; develops processing and documentation standards; and coordinates standard

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definitions. The Office manages the Department's energy information forms clearance process and respondent burden control program within the Department, including preparation of the energy information part of the Department's annual Information Collection Budget. The Office also verifies the quality and meaningfulness of energy information and the processes used to collect, analyze, and forecast it. The FY 1987 request for this program is $855,000 and 28 full time equivalent staff years, a decrease of $62,000 from the FY 1987 base level and an increase of 1 FTE.

In carrying out its responsibilities, the Office processes energy information forms clearance packages for the Department, provides design review of data collection forms, reviews information collection systems within the Department, and produces various reports which monitor burden upon the public resulting from the Department's energy data collections. The Office is also responsible for maintaining the Data Resources Directory which is used for managing the Information Collection Budget and related activities, including publishing forms and model directories; for preparing survey and sampling designs; for developing universe lists and sampling frames policies and methodologies; and for developing data collections standards and procedures. It has the further responsibility for evaluating data and analytical systems, for ensuring the integrity of archiving and documentation, and for inspecting the quality of data and forecasting systems. Reductions from the FY 1986 level will be achieved by deferring some modeling quality audit projects and by postponing publication of a Handbook of Methods. The forms clearance and burden control programs will be operated at last year's plateau. The additional FTE is needed to provide more timely review of EIA products prior to publication.

Program direction costs for NEIS consist of salaries, benefits, and travel expenses for NEIS staff. The Departmental request of $19,104,000 provides for payroll and travel costs for 421 FTE, an increase of $39,000 from the FY 1987 base level. The program direction increase is due to the fact that EIA entered FY 1986 considerably understaffed. Combined with the understaffing, the impact of the FY 1986 reductions associated with the Balanced Budget and Emergency Deficit Control Act of 1985 (Gramm-Rudman-Hollings reduction) resulted in decreases to the FY 1986 budget value for this program. The FY 1987 budget request assumes continued hiring to reach the FY 1987 FTE ceiling of 421. The request does not include 24 FTE which are funded on a reimbursable basis by the FERC and the Office of Civilian Radioactive Waste Management.

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Personnel Resources

	FY 1985 1/	FY 1986	FY 1987
Oil and Gas:			
Direct	157	159	151
Reimbursable (FERC)	11	11	11
Coal, Nuclear, Electric and Alternate Fuels:			
Direct	116	114	112
Reimbursable (FERC)	9	9	9
Nuclear Waste Funded	4	4	4
Energy Markets and End Use:			
Direct	97	99	96
ADP Services:			
Direct	11	12	12
National Energy Information Center:			
Direct	21	20	22
Statistical Standards:			
Direct	24	27	28
Total, National Energy Information System:			
Direct	426	428	421
Reimbursable (FERC)	20	20	20
Nuclear Waste Funded	4	4	4

1/ Actual FY 1985 FTE.

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Anticipated Workload - National Energy Information System*

	FY 1985	FY 1986	FY 1987
Oil and Gas - DOE			
Data gathering systems maintained	19	19	19
Models maintained	9	9	9
Data reports prepared**	28	28	28
Analysis and interpretive reports prepared**	34	34	34
One-time special projects	9	10	9
Oil and Gas - Support to FERC (reimbursable)			
Data gathering systems maintained	12	12	12
Data reports prepared**	4	4	4
Coal, Nuclear, Electric, and Alternate Fuels - DOE			
Data gathering systems maintained	15	17	18
Models maintained	12	13	13
Data reports prepared**	15	15	15
Analysis and interpretive reports prepared**	12	9	9
One-time special projects	5	5	3
Coal, Nuclear, Electric, and Alternate Fuels - Support to FERC (reimbursable)			
Data gathering systems maintained	9	9	9
One-time special projects	1	1	1
Coal, Nuclear, Electric, and Alternate Fuels - Support to Nuclear Waste Program (reimbursable)			
Data gathering systems maintained	2	2	2
Models maintained	1	1	1
One-time special reports	2	2	1
Energy Markets and End Use - DOE			
Data gathering systems maintained	11	11	8
Models maintained	13	12	12
Data reports prepared**	21	15	15
Analysis and interpretive reports prepared**	22	21	18
One-time special projects	7	7	5

* Workload indicators do not take into account varying complexity factors (e.g. number of respondents and number and type of data elements included); therefore, units are not necessarily comparable.

** Each separate title is counted as one report, regardless of whether it is weekly, monthly, quarterly, or annual. FERC analysis reports are jointly sponsored with EIA.

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Anticipated Workload - National Energy Information System (cont.)

	FY 1985	FY 1986	FY 1987
ADP Services - DOE			
Technical assistance responses	6,480	7,100	8,000
Batch jobs processed	1,150,468	1,226,000	1,300,000
Interactive sessions supported	619,213	681,000	720,000
CPU hours supported	8,436	9,300	10,000
Validated users	2,564	2,900	3,000
Connect time (hours)	508,866	580,000	630,000
Lines printed (in thousands)	1,208,854	1,500,000	1,600,000
ADP Services - FERC			
Technical assistance responses	1,114	1,114	1,200
Batch jobs processed	150,150	150,150	150,150
Interactive sessions supported	120,811	120,811	120,000
CPU hours supported	949	949	949
Validated users	289	289	289
Connect time (hours)	70,120	70,120	70,000
Lines printed (in thousands)	186,508	186,508	200,000
Energy Information Center			
Separate issues of publications written/edited/reviewed	250	250	250
Separate issues of publications disseminated	700,000	700,000	700,000
Inquiries handled	70,000	70,000	70,000
Documents, forms, and tables classified/indexed	60,000	10,000	8,000
Directories published	11	11	10
Documents microfilmed	1,200,000	200,000	150,000
One-time publications prepared	30	30	30
Separate issues of publications produced through EPIC/JANUS	12	100	220
Statistical Standards - DOE			
Forms clearance packages processed	90	85	35 1/
Public burden hours--DOE energy information and statistical data collections (in millions)	1.1	1.1	1.0
Forms management reports	45	45	45
Reports reviewed	150	150	150
Surveys reviewed	6	10	10
Surveys designed	2	0	0
Standards developed	10	15	10

1/ Decrease in FY 1987 results from packaging EIA forms clearance requests on a program level rather than an individual form level.

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Data quality assessments	1	1	1
Data system audits	8	8	7
Model audits	2	3	2
Model evaluation software	0	0	1
Models archived	25	30	30
Information collection budget preparation and maintenance	1	1	1
Data resource directory files developed	2	0	0
Data resource directory files maintained	7	7	6
Technical papers	10	10	7
Quality management reports	4	3	3
Statistical Standards - FERC			
Forms clearance packages processed	50	50	50
Public burden hours (in millions)	4.5	4.5	4.5

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DEPARTMENT OF ENERGY
FISCAL YEAR 1987 CONGRESSIONAL BUDGET REQUEST
KEY ACTIVITY SUMMARY
Energy Information Administration
National Energy Information System

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Petroleum Supply Information	Produced weekly, monthly and annual petroleum supply reports. Conducted comprehensive review of data collection instruments and obtained OMB clearance of revised forms. Conducted quality assurance programs. ($5,691,000)	Revise weekly, monthly and annual petroleum supply data surveys to reduce operating costs while maintaining report quality, including utilization of advanced statistical techniques and adoption of data protection. Decrease quality monitoring and survey follow-up activities. ($4,893,000)	Continue to produce and publish basic weekly, monthly and annual petroleum supply statistics. Complete three-year development of error detection/correction methodologies to increase operating efficiencies. ($5,040,000)
Reserves and Natural Gas Information	Produced annual report on reserves and production of crude oil, natural gas, and natural gas liquids and monthly reports on natural gas supplies, disposition, and prices. Conducted selected analyses of key natural gas issues. Initiated study of natural gas contracts to meet Congressional request. Conducted analysis of critical natural gas and petroleum resource issues. ($4,452,000)	Continue to produce monthly and annual data series. Continue integration of monthly and annual data systems. Conduct the natural gas contracts study. Continue to study other major resource issues. Curtail quality maintenance activities related to analysis. Decrease costs for producing annual reserves report with reduced contract costs. ($3,547,000)	Continue to produce basic energy data series. Provide limited analytical support to other Departmental elements. Complete the integrated natural gas data base. Update natural gas supply analysis to reflect changing regulatory environment. ($3,754,000)

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DEPARTMENT OF ENERGY
FISCAL YEAR 1987 CONGRESSIONAL BUDGET REQUEST
KEY ACTIVITY SUMMARY
Energy Information Administration
National Energy Information System

Key Activities	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Petroleum Marketing Information	Conducted monthly and annual data collection surveys concerning petroleum product sales and prices. Updated sample frames. Funded heating oil grant program. Conducted quality assurance program. ($3,775,000)	Continue to operate basic petroleum marketing surveys. Conduct sample rotation and recalculate estimation ratios. Reinstitute distillate and residual fuel oil sales survey. Fund heating oil grant program Scale back data consolidation effort. ($3,827,000)	Continue to produce basic petroleum marketing data series. Eliminate frames coverage for diesel kerosene, and propane supplies. Abandon petroleum marketing data consolidation effort. Discontinue heating oil grant program funding. ($3,585,000)
Coal Information	Collected and produced weekly, monthly, quarterly, and annual statistical reports. Completed data interpretations and analyses on key coal issues. Conducted scheduled quality maintenance activities and funded catch-up quality assurance activities as well as ongoing quality monitoring. ($1,557,000)	Continue basic data and analysis efforts. Reduce quality maintenance activities. Maintain historical data bases. Conduct limited analyses of coal supply, transportation, and exports. Develop coal imports monitoring program in response to new legislative requirement. ($1,116,000)	Continue to maintain historical data bases and produce basic energy data series. Conduct limited coal analyses. Produce coal imports data. Delay production of comprehensive quarterly coal distribution report and annual coal production report. Reduce coal model maintenance and updates and defer quality maintenance, particularly requirements analysis, for existing data programs. ($923,000)

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DEPARTMENT OF ENERGY
FISCAL YEAR 1987 CONGRESSIONAL BUDGET REQUEST
KEY ACTIVITY SUMMARY
Energy Information Administration
National Energy Information System

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Electric Power Information	Produced monthly, quarterly and annual reports on all aspects of electric power. Provided support to numerous external users. Developed comprehensive operations, technology, and financial analysis program for the electric power area. Funded quality assurance program. ($3,234,000)	Continue to produce reports and develop electric power projections. Defer quality maintenance projects, including model documentation and data updates for financial model. Bulk of reductions due to cancellation of operations and technology data analysis development effort. ($1,946,000)	Continue basic data and analysis program, and support to other agencies. Defer quality maintenance projects and defer effort to develop an integrated financial analysis capability. ($1,786,000)
Alternate Fuels Information	Collected solar collector manufacturing data and produced wood energy consumption report. ($242,000)	Discontinue all alternate fuels reports. Maintain minimal staffing to monitor activities in the alternate fuels area. ($0)	Maintain minimal awareness of activities in the alternate fuels area. ($0)
Nuclear Information	Produced data concerning nuclear fuels for statistical reports and analyses. Conducted uranium industry viability analysis and gathered data concerning nuclear waste disposal. ($1,211,000)	Continue to produce basic information and projections. Conduct uranium viability program using FY 1985 funds. Provide support to other DOE components. Support the Department's nuclear waste management activities. Cancel coal versus nuclear plant costs study. ($850,000)	Produce basic nuclear energy data and key analysis. First year of EIA funding ($500,000) of the uranium industry viability program. Continue to support the Department's nuclear waste management program. Decrease nuclear fuel cycle analysis. ($1,280,000)

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DEPARTMENT OF ENERGY
FISCAL YEAR 1987 CONGRESSIONAL BUDGET REQUEST
KEY ACTIVITY SUMMARY
Energy Information Administration
National Energy Information System

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Integrated and Economic Energy Information	Produced EIA's baseline energy forecasts. Prepared integrated energy statistical publications. Conducted energy industry financial analysis, including the Financial Reporting System. Responded to requests for analysis of current energy issues including a study of the impact of tax proposals on the energy industry. Operated State Energy Data System and State Energy Price and Expenditures Data System. Completed model update and enhancements for short term forecasts and commercial and residential energy end use. Performed quality assurance and quality maintenance activities. ($1,708,000)	Continue to produce baseline integrated energy forecasts and monthly and annual integrated energy statistics. Develop automated linkages to energy source data bases. Continue Financial Reporting System, State Energy Data System, and Energy Price and Expenditures Data System. Reduce funding for special analyses in response to ad hoc requests and for model updates and maintenance. ($1,270,000)	Continue to produce baseline energy forecasts. Defer model updating and maintenance. Produce monthly and annual integrated historical data Defer quality maintenance activities. Eliminate Financial Reporting System State Energy Data System, and State Energy Price Expenditures Data System. Perform energy industry financial and tax analysis using results of FY 1986 data collection and publicly available data. ($862,000)
Energy End Use Information	Funded Manufacturing Energy Consumption Survey. Conducted industrial oxides emissions study. Performed quality assurance and quality maintenance activities. Assisted Social Security Administration (SSA) in administering the Low Income Home Energy Assistance Program. ($1,899,000)	Fund the Non-Residential Buildings Energy Consumption Survey (NBECS). Begin compiling results of Manufacturing Energy Consumption Survey. Perform needed quality maintenance activities. Continue SSA support. ($2,632,000)	Fund the Residential Energy Consumption Survey (RECS). Begin compiling results of Non-Residential Buildings Energy Consumption Survey. Continue SSA support. Funding decrease due to the fact that RECS a less complex and therefo less costly survey than NBECS to implement and analyze. ($2,315,000)

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DEPARTMENT OF ENERGY
FISCAL YEAR 1987 CONGRESSIONAL BUDGET REQUEST
KEY ACTIVITY SUMMARY
Energy Information Administration
National Energy Information System

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
International & Contingency Information	Collected and published information concerning international energy activities. Provided information and analysis to support contingency planning in the Department and by interagency groups. Maintained and documented all contingency planning models. Provided support for International Energy Agency emergency testing. Monitored international activities and provided special reports as needed on timely issues. ($489,000)	Continue to produce basic information concerning international energy activities and monitor the energy situation. Provide contingency analysis to DOE, interagency committees, and the International Energy Agency. Curtail other support for the Department's contingency planning. ($460,000)	Continue international energy data and analysis program. Maintain and document contingency planning models. ($493,000)
ADP Services	Began replacement of IBM mainframe and peripheral equipment. Continued publications automation. Managed ADP contracts. Provided computer services to FERC and other DOE Offices on a reimbursable basis. ($7,297,000)	Continuation of FY 1985 activities with full year funding associated with equipment replacement. ($9,336,000)	Continuation of FY 1986 activities with the exception of altering the schedule for some planned purchases of peripheral computer and telecommunications equipment. ($8,527,000)
National Energy Information Center	Performed editorial and graphics preparation and dissemination activities for all EIA information products. Responded to public inquiries. Microfilmed EIA documents. Maintained EIA mailing lists. ($771,000)	Continuation of FY 1985 activities with reduced levels for microfilming and document indexing. ($733,000)	Continuation of FY 1986 activities with reduced levels for microfilming, publications support, and mail list maintenance. ($604,000)

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DEPARTMENT OF ENERGY
FISCAL YEAR 1987 CONGRESSIONAL BUDGET REQUEST
KEY ACTIVITY SUMMARY
Energy Information Administration
National Energy Information System

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Statistical Standards	Developed standards for statistical integrity and monitored conformance with standards. Coordinated EIA advisory support. Conducted quality audits of data systems and computer models (funded by affected program offices). Conducted design, review, and clearance of data collection forms. Monitored the respondent burden control program. ($255,000)	Assume funding for quality assurance activities previously funded by program offices. Continue standards development, survey design, review, and clearance, quality audits, and advisory liaison activities. Maintain Data Resources Directory. Fund independent expert reviews of major studies. ($879,000)	Operate forms clearance and burden control programs at FY 1986 level. Postpone publication of a Handbook of Methods. Reduce activity in model quality audits. ($855,000)
Program Direction	Provided funds for salaries, benefits, and travel for National Energy Information System staff. ($19,484,000)	Continuation of FY 1985 activities with decreased FTE funding due to large number of unfilled positions at beginning of year and the impact of the Gramm-Rudman-Hollings reductions. ($18,512,000)	Continuation of FY 1986 activities. ($19,104,000)

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Energy Information Administration
Energy Information
(Tabular dollars in thousands, narrative in whole dollars)

	FY 1985 Approp.	FY 1986 Approp.	FY 1987 Base	FY 1987 Request	Request vs. Base
Policy and Management					
Operating Expenses:					
Program Support	$ 224	$ 441	$ 565	$322	- 243
Program Direction	8,630	7,282	7,618	10,201	+ 2,583
Total, Policy and Management (P&M)	$8,854	$7,723	$8,183	$10,523	+$2,340
Staffing, P&M FTE:					
Direct	34	33	34	34	
Reimbursable	0	0	0	0	

Authorization: P.L.'s 75-688, 93-319, 94-963, 94-385, 95-619, 95-620, 95-621, 96-102, 96-294, 97-257, & 95-91; & 16 U.S.C. 791a et. seq.

Summary of Changes
Policy and Management
(Dollars in thousands)

FY 1986 Appropriation Enacted	$8,070
Balanced Budget and Emergency Deficit Control Act adjustment	- 347
FY 1986 Budget Authority	$7,723
Within-Grades, Promotions, Awards, Increased Contribution to Retirement and Benefits	+ 41
Contract, Travel, and Training Inflation	+ 268
Contract Award Fees	+ 105
Shift of 1 FTE from NEIS	+ 46
FY 1987 Base	$8,183
Program Increases:	
Administrative Support Services Provided by M&A	+2,583
Program Decreases:	
Systems Integration Activities	- 155
Planning and Management	- 88
FY 1987 Request	$10,523

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Policy and management provides resources for the central management, guidance, and coordination of all EIA activities. The FY 1987 request is $10,523,000 and 34 FTE, an increase of $2,340,000 and 1 FTE over the FY 1987 base level. The Administrator of the Energy Information Administration is responsible for providing relevant, high quality, and timely energy information to the Executive Branch, Congress, State governments, and the public. The Administrator is also responsible for providing energy data, analysis, and processing support to other DOE components, and for preparation of regularly scheduled and special purpose energy forecasts and analyses, and for supporting departmental contingency planning and emergency operations. The Administrator is supported by a Deputy Administrator, an immediate staff, and the Office of Planning and Resources.

The Office of Planning and Resources manages overall EIA program planning and evaluation, project control, budgeting, and procurement; performs organization and management analysis; and provides personnel management and logistical support services. The Office also monitors and coordinates all General Accounting Office and Professional Audit Review Team activities, tracks legislation for energy information implications, prepares and coordinates Congressional testimony, and handles the disclosure of sensitive company-submitted information.

The level of funding requested for FY 1987 reflects both some savings and some cost increases. Planned improvements on automated management tracking systems will not be made at this funding level and annual and multi-year planning activities will be reduced, for a total savings of $88,000. Systems integration studies totalling $155,000 will be eliminated. Funding for program direction will increase from the FY 1987 base level of $7,618,000 to $10,201,000 to meet the administrative support requirements estimated by the Assistant Secretary for Management and Administration.

Personnel Resources

	FY 1985	FY 1986	FY 1987
Total Policy and Management	34	33	34

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Anticipated Workload - Policy and Management*

	FY 1985	FY 1986	FY 1987
Program plans	3	3	2
Budgets	3	3	3
Financial plans	12	12	12
Space plans, telephone services, and other ad hoc requests	556	550	500
Travel requests	375	375	375
Printing requests	200	200	200
Correspondence and project tracking	600	600	600
Personnel actions and training requests processed	800	800	800
Contract actions processed	950	900	900

* Workload indicators do not take into account varying complexity factors (e.g. a contract action may involve a new task assignment to develop a large computer processing system or may involve a simple modification to an ongoing task); therefore, units are not necessarily comparable.

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DEPARTMENT OF ENERGY
FISCAL YEAR 1987 CONGRESSIONAL BUDGET REQUEST
KEY ACTIVITY SUMMARY
Energy Information Administration
Policy and Management

Key Activity	Actual Activities During FY 1985	Estimated Activities During FY 1986	Planned Activities During FY 1987
Planning and Resource Management	Developed EIA program plans and annual and multi-year operating plans. Prepared internal review budget, OMB budget, Congressional budget, and related testimony and hearing material. Executed budget. Processed and monitored contract actions. Operated and maintained automated management tracking system ($224,000)	Continuation of FY 1985 activities. Perform systems integration studies. ($441,000)	Investigate feasibility of continued systems integration activities. Continuation of other FY 1986 activities with reduction in planning activities. Deferral of planned improvements to automated management tracking systems. ($322,000)
Program Direction	Provided funds for salaries, benefits, and travel for Policy and Management staff. Provided funds for all EIA staff training. Provided administrative support to Dallas Field Office. Provided funds to Department for space rental, utilities, communications, supplies, and other support services. ($8,630,000)	Continuation of FY 1985 activities with 10 percent reduction in administrative support funding per OMB Order. ($7,282,000)	Continuation of funding for Policy and Management salaries, benefits, and travel, EIA training, and support to Dallas Field Office. Increase funding for Departmental administrative support funding. ($10,201,000)

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DEPARTMENT OF HEALTH AND HUMAN SERVICES

HEALTH RESOURCES AND SERVICES ADMINISTRATION

Indian Health

Justification for Appropriation, Fiscal Year 1987

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INDIAN HEALTH [SERVICES] *SERVICE*

For expenses necessary to carry out the Act of August 5, 1954 (68 Stat. 674), the Indian Self-Determination Act, the Indian Health Care Improvement Act, and titles III and [V] 1/ *XXI* and section 338G of the Public Health Service Act with respect to the Indian Health Service, including hire of passenger motor vehicles and aircraft; purchase of reprints; purchase and erection of portable buildings; payments for telephone service in private residencies in the field, when authorized under regulations approved by the Secretary; [$823,133,000:] *the administration of construction, major repair, improvements and purchase of equipment for health and related auxiliary facilities, including quarters for personnel, preparation of plans, specifications, and drawings; acquisition of sites, purchase of trailers; and for administering the provision of domestic and community sanitation facilities for Indians, 2/ $722,378,000, of which $2,450,000 shall be available for repairs and improvements to structures owned or operated by the Indian Health Service; together with payments received during the year for services furnished by the Indian Health Service, the appropriation to remain available until expended: 2/ Provided,* That funds made available to tribes and tribal organizations through grants and contracts authorized by the Indian Self-Determination and Education Assistance Act of 1975 (88 Stat. 2203; 25 U.S.C. 450), shall remain available until September 30, [1987] *1988.* Funds provided in this Act may be used for one-year contracts and grants which are to be performed in two fiscal years, so long as the total obligation is recorded in the year for which the funds are appropriated: *Provided further,* That the amounts collected by the Secretary of Health and Human Services under the authority of title IV of the Indian Health

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Care Improvement Act shall be available until September 30, [1987] *1988, first* for the purpose of achieving compliance with the applicable conditions and requirements of titles XVIII and XIX of the Social Security Act (exclusive of planning, design, construction of new facilities, or major renovation of existing Indian Health Service facilities)[:] *and second for the purpose of improving health status among the populations served by the Indian Health Service:* 3/ *Provided further,* That funding contained herein, and in any earlier appropriations Acts for scholarship programs under section 103 of the Indian Health Care Improvement Act and section 338G of the Public Health Service Act with respect to the Indian Health Service shall remain available for expenditure until September 30, [1987] *1988.* *(Department of the Interior and Related Agencies Appropriation Act, 1986, as included in Public Law 99-190.)*

Explanation of Language Changes

1/ Technical change. P.L. 98-24 redesignated Title V, Miscellaneous provisions, of the Public Health Service Act, as Title XXI.

2/ This provides authority for construction activities formerly included in the Indian Health Facilities Appropriation language. It is proposed to merge the services and facilities appropriation to provide greater management flexibility and efficiency.

3/ This provision would allow the IHS to use collections to provide additional health services to or to serve additional IHS beneficiaries in order to improve the health status among the populations served by IHS.

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[INDIAN HEALTH FACILITIES]

[For construction, major repair, improvement, and equipment of health and related auxiliary facilities, including quarters for personnel; preparation of plans, specifications, and drawings; acquisition of sites, purchase and erection of portable buildings, purchases of trailers and for provision of domestic and community sanitation facilities for Indians, as authorized by section 7 of the Act of August 5, 1954 (42 U.S.C. 2004a), the Indian Self-Determination Act and the Indian Health Care Improvement Act, $46,947,000, to remain available until expended: *Provided*, That the Rosebud, South Dakota, hospital shall be designed and constructed with a capacity of 35 beds.] 1/ *(Department of the Interior and Related Agencies Appropriation Act, 1986, as included in Public Law 99-190.)*

Explanation of Language Changes

1/ It is proposed to merge the services and facilities authorization to provide greater management flexibility and efficiency.

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ADMINISTRATIVE PROVISIONS, INDIAN HEALTH SERVICE

Appropriations in this Act to the Indian Health Service, available for salaries and expenses, shall be available for services as authorized by 5 U.S.C. 3109 but at rates not to exceed the per diem equivalent to the rate for GS-18, and for uniforms or allowances therefor as authorized by law (5 U.S.C. 5901-5902), and for expenses of attendance at meetings which are concerned with the functions or activities for which the appropriation is made or which will contribute to improved conduct, supervision, or management of those functions or activities: *Provided*, That none of the funds appropriated under this Act to the Indian Health Service shall be available for the initial lease of permanent structures without advance provision therefor in appropriations Acts: *Provided further*, That non-Indian patients may be extended health care at all Indian Health Service facilities, if such care can be extended without impairing the ability of the Indian Health Service to fulfill its responsibility to provide health care to Indians served by such facilities and subject to such reasonable charges as the Secretary of Health and Human Services shall prescribe, the proceeds of which, *together with funds recovered under the Federal Medical Care Recovery Act (42 U.S.C. 2651-53)*, 1/ shall be deposited in the fund established by sections 401 and 402 of the Indian Health Care Improvement Act: *Provided further*, That funds appropriated to the Indian Health Service in this Act, except those used for administrative and program direction purposes, shall not be subject to limitations directed at curtailing Federal travel and transportation: *Provided further*, That with the exception of service units which currently have a billing policy, the Indian Health Service shall not initiate any further action to bill

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Indians in order to collect from third-party payers nor to charge those Indians who may have the economic means to pay unless and until such time as Congress has agreed upon a specific policy to do so and has directed the Indian Health Service to implement such a policy:] 2/ [*Provided further*, That notwithstanding any other provisions of law, to satisfy the outstanding judgment against the Seattle Indian Health Board resulting from termination of its occupancy of the Kobe Park building in Seattle, Washington, $180,000 shall be provided from the unobligated balance available to the Indian Health Service from prior years' appropriations. Such payment shall be made only if the owners of the Kobe Park Building Company accept the sum named as full satisfaction for current or future claims against the Seattle Indian Health Board and the individual members of the Board.] 3/ *Provided further, That the Secretary of Health and Human Services may authorize special retention pay under paragraph (4) of 37 U.S.C. 302(a) to any regular or reserve officer for the period during which the officer is obligated under section 338B of the Public Health Service Act and assigned and providing direct health services or serving their obligation as a specialist:* 4/ *Provided further, That hereafter the Indian Health Service may seek subrogation of claims including but not limited to auto accident claims, including no-fault claims, personal injury, disease, or disability claims, and worker's compensation claims, the proceeds of which shall be credited to the fund established by sections 401 and 402 of the Indian Health Care Improvement Act:* 5/ *Provided further, That the Indian Health Service shall take whatever action it deems appropriate to collect reimbursements from third-party payors for costs of care given to persons treated at an IHS facility.* 6/

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Explanation of Language Changes

1/ Currently, funds collected from tortfeasors for the care provided by IHS to injured parties is returned to the Treasury. This provision will provide a mechanism by which funds recovered from tortfeasors will be recovered into the fund established by sections 401 and 402 of the Indian Health Care Improvement Act and thus made available for the purpose for which the funds were initially appropriated.

2/ A new administrative provision would allow IHS to take whatever action it deems appropriate to collect from third-party payors.

3/ This provision is no longer applicable. It was a one-time provision applicable to the 1986 appropriations Act.

4/ This provision would reinstate special pay for National Health Service Corps obligees serving in the IHS and, thereby, enhance the IHS' ability to recruit health professionals for service in hardship areas.

5/ Provides the IHS with authority to recover for the costs of care resulting from situations not covered by the Federal Medical Care Recovery Act. This provision will provide a mechanism to make recovered funds available for the purpose for which the funds were initially appropriated.

6/ This provision would authorize IHS to take whatever steps are appropriate to collect from third-party payors for the costs of care provided at IHS facilities.

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HEALTH RESOURCES AND SERVICES ADMINISTRATION
Indian Health Service

Amounts Available for Obligation

	1985	1986	1987
Appropriation:			
Annual	$793,728,000	$818,194,000	$722,378,000
Enacted Supplemental Appropriation (Jan. 1985 Pay Raise)	7,000,000	---	---
Deficit Reduction Act of 1984, (Section 2901 Savings)	-161,000	---	---
Sequester Order	---	-10,429,000	---
Proposed Rescission	---	-24,262,000	---
Subtotal, Appropriation	$800,567,000	$783,503,000	$722,378,000 6/
Permanent Authority:			
(Operations and Maintenance of Quarters 75X5071) (Reimburs)	709,124	2,970,000 8/	3,000,000
Subtotal, Adjusted Appropriation	$801,276,124	$786,473,000	$725,378,000
Receipts and Reimbursements from:			
"Federal Funds"	3,960,530	2,952,000	2,952,000
"Trust Funds"	17,313,972	20,000,000	25,100,000
"Non-Federal Sources"	20,323,227	25,492,000 3/	45,648,000
Subtotal	41,597,729 1/2/1/	48,444,000 1/2/	73,700,000 1/1/
Unoblig. Balance Start of Year	12,948,982	15,529,774	1,689,394
Unoblig. Balance End of Year	-15,529,774	-1,689,394	-1,689,394
Unoblig. Balance Lapsing	-811,222	-63,000 4/	---
Total Obligations	$839,481,839	$848,694,380 5/	$799,078,000

1/ Included in totals are reimbursements collected for medical care received by non-beneficiaries at IH facilities, Intragency Agreement between the National Institutes of Health, National Institute of Arthritis, Diabetes and Digestive and Kidney Disease (NIADDK), and a number of smaller agreements with other Agencies. The reimbursements collected in 1985 totalled $7,600,000, including $3,000,000 in reimbursements from employees housed in IHS Personnel Quarters. In 1985, a new account (75X5071) was established for collection of personnel quarters reimbursements; $709,124 was collected into this new account in 1985. $3 million is estimated to be collected into this new account in FY 1986 and 1987. The new account is shown on this schedule as Permanent Authority. In addition, $4,600,000 is estimated to be collected in FY 1986 and FY 1987 in other reimbursements.

2/ Includes $1,008,530 collected through the consolidated working fund, DHHS research grants.

3/ Includes a reduction of $256,000 in reimbursements as part of the Balanced Budget and Emergency Deficit Control Act of 1985.

4/ Represents lapsing of consultant services funds withheld from obligation as required by Section 515 of the Treasury Postal Service Appropriation Act, 1986, as included in P.L. 99-190.

5/ Includes reductions in budget authority of $10,429,000 required by the Balanced Budget and Emergency Deficit Control Act of 1985, P.L. 99-177, and a proposed rescission of $24,262,000; reductions in reimbursements of $286,000 required by the Balanced Budget and Emergency Control Act of 1985; and $63,000 withheld from obligation as required by Section 515 of the Treasury Postal Service Appropriation Act, 1986 as included in P.L. 99-190.

6/ Includes $2,450,000 for modernization and repair of existing Indian Health facilities which is proposed for transfer to the Indian Health Appropriation.

7/ Does not include reimbursements listed as permanent authority for operation and maintenance of quarters; 1985, $709,124; 1986, $2,970,000; and 1987, $3,000,000.

8/ Reflects a reduction of $30,000 in reimbursements sequestered pursuant to the Balanced Budget Emergency Deficit Control Act of 1985, P.L. 99-177.

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Health Resources and Services Administration

Indian Health
(Facilities)

Amounts Available for Obligation

	1985	1986	1987	
Appropriation	$61,634,000	$46,665,000	$ ---	
Sequester order	---	- 467,000	---	
Proposed rescission	---	- 38,642,000	---	
Subtotal, adjusted appropriation	61,634,000	7,556,000	---	
Unobligated balance, start of year	36,131,740	39,105,455	---	
Recoveries of prior years obligations	239,702	---	---	
Unobligated balance, end of year	- 39,105,455	---	---	
Unobligated balance, lapsing	- 239,702	---	---	
Total obligations	$58,660,285	$46,661,455	$ ---	1/

1/ Excludes $2,450,000 for modernization and repair of existing facilities proposed for transfer to the Indian Health Appropriation.

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Summary of Changes

Appropriation:	
1986 Appropriation	$818,194,000
1986 Permanent Authority (Operations & Maintenance of Quarters 75X5071 (Reimbursements)	3,000,000 2/
1986 Sequestered Order	-10,429,000
1986 Proposed Rescission	-24,262,000
Total Estimated Budget Authority	$786,503,000
(obligations)	(834,917,000) 3/ 4/
1987 Request	725,378,000 1/
(obligations)	(799,078,000)
Net change (BA)	-61,125,000
(Obligations)	(-35,839,000)

	1986 Base		Change from Base	
	FTEs	Amount	FTEs	Amount
Funded from Direct Appropriation				
Increases:				
Built-in:				
1. Increase in FICA Payments	--	N/A	--	$ +22,000
2. Within Grade Promotions	--	N/A	--	+1,682,000
3. Increased Cost of Medical and Other Supplies	--	5,242,000	--	+328,000
4. Increased Cost of Health Care Provided Under Contracts or Grants	--	200,851,000	--	+13,151,000
5. Increased Cost of Contractual Services	--	3,155,000	--	+133,000
6. Increased Cost of Rents, Communications, and Utilities	--	839,000	--	+36,000
7. Increased Cost of Travel and Transportation of Things	--	9,003,000	--	+434,000
8. Increased Cost of Maintenance and Repair	--	8,621,000	--	+490,000
9. Increased Cost of Medical and Other Equipment	--	2,254,000	--	+95,000
10. Increased Cost of Printing.	--	152,000	--	+6,000
11. Increased Cost of Providing Scholarships (Indian Health Manpower)	--	5,304,000	--	+114,000

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	1986 Base FTEs	1986 Base Amount	Change from Base FTEs	Change from Base Amount
Increases:				
Program:				
Direct Operations -				
1. Resource Patient Management System	--	2,000,000	--	$ +500,000
2. Indian Health Facilities	--	N/A	--	+2,450,000
Subtotal			--	+19,441,000
Decreases:				
Built-In:				
1. Non-Recurring Cost of Indian Health Manpower Program	--	$6,395,000	--	-1,091,000
2. Non-Recurring Cost of Alaska Hepatitis B and Immunization Program	--	2,678,000	--	-2,283,000
Decreases:				
Program:				
1. Hospital and Health Clinic	7,716	422,216,000	-292	-12,602,000
2. Dental Services	640	25,620,000	-44	-1,007,000
3. Mental Health	192	11,334,000	-14	-403,000
4. Contract Health Care	--	165,866,000	--	-37,818,000
5. Community Health Representatives	--	14,500,000	--	-14,500,000
6. Urban	--	7,200,000	--	-7,200,000
7. Tribal Management	--	500,000	--	-500,000
8. Direct Operations	1,234	57,787,000	-67	-3,162,000
Subtotal			-417	-80,566,000
Net Change (BA)			-417	-$61,125,000
Funded from Reimbursements				
Increases:				
Built-In (Funded from Additional Collections of Medicare/Medicaid Reimbursements):				
1. Increase in FICA Payments	--	N/A	--	+54,000
2. Within Grade Promotions	--	N/A	--	+3,216,000
3. Increased Payments to HRSA Service & Supply Fund, Federal Communications Systems, and Bureau of Employee Compensation	--	11,994,000	--	+1,756,000
4. Increased Cost of GSA Standard Level User Charge (SLUC)	--	5,187,000	--	+218,000
5. Increased Cost of Medical and Other Supplies	--	39,839,000	--	+2,209,000
6. Increased Cost of Health Care provided under Contracts or Grants	--	117,259,000	--	+7,036,000

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	1986 Base FTEs	1986 Base Amount	Change from Base FTEs	Change from Base Amount
7. Increased Cost of Rents, Communications, and Utilities	--	10,358,000	--	+435,000
8. Increased Cost of Travel and Transportation of Things	--	11,831,000	--	+497,000
9. Increased Cost of Medical and Other Equipment	--	1,507,000	--	+63,000
10. Increased Cost of Printing	--	1,533,000	--	+64,000
Subtotal			--	+15,549,000
Increases:				
Program (Funded From Additional Collection of Medicare/ Medicaid and Private Insurers Reimbursements):				
1. Reimbursements used to Partially Fund the Program Decrease in Hospitals and Health Clinics Activity	--	---	+275	+9,692,000 5/
2. Increase Reflects the Effect in 1987 of Funds Sequestered in 1986 from Operation and Maintenance of Quarters ($30,000) and Other Non-Federal Sources ($16,000)	--	---	--	+46,000
Subtotal			+275	+25,286,000
Net Change (Obligations)			-142	-$35,839,000

1/ Includes $2,450,000 for modernization and repair of existing Indian Health Facilities. The Indian Health Facilities program is proposed to be merged with the Indian Health Appropriation in FY 1987. Also includes $3,000,000 for the IHS Personnel Quarters Account (75X5071).

2/ Does not reflect a reduction of $30,000 in sequestered reimbursement funds for the Operation and Maintenance of Quarters.

3/ Excludes the Medicare/Medicaid reimbursements unobligated balance start of year (1986) of $13,131,256 and the unobligated balance of $709,124 for the Operation and Maintenance of Quarters Account established in the 1985.

4/ Does not include a reduction of $63,000 for lapsing of consultant services funds withheld from obligation as required by Section 515 of the Treasury Postal Service Appropriation Act, 1986, as included in P.L. 99-190.

5/ Includes additional collection of Medicare and Medicaid reimbursements of $1,452,000, Private Insurers collections of $8,000,000, and $240,000 which reflects the effect in 1987 of funds sequestered in 1986 from Medicaid collections.

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Indian Health
(Facilities)

Summary of Changes

1986 Appropriation	$46,665,000
1986 Sequester order	- 467,000
1986 Proposed rescission	- 38,642,000
Total estimated budget authority	7,556,000
(Obligations)	(7,556,000)
Unobligated balance from fiscal year 1985	39,105,455
(Obligations)	(46,661,455)
1987 Request	--- 1/
(Obligations)	(---)
Net change	- 46,661,455
(Obligations)	(-46,661,455)

1/ Excludes $2,450,000 for modernization and repair of existing facilities proposed for transfer to the Indian Health Appropriation.

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Indian Health
Obligations by Activity

	1986 Appropriation		1986 After Sequestering		1986 Revised Estimate		1987 Estimate	
Clinical Services:	FTE*/**	Amount	FTE**	Amount	FTE**	Amount	FTE**	Amount
IH & Tribal Health								
Delivery Systems.....	8,903	$569,629,380	8,697	$544,066,380	8,340	$537,197,380	9,210	$538,688,000
(Budget Authority)...	--	(304,174,000)	--	(478,077,000)	--	(472,086,000)	--	(481,993,000)
Contract Care.....	--	170,040,000	--	168,340,000	--	165,066,000	--	138,000,000
(Budget Authority).....	--	(170,040,000)	--	(168,340,000)	--	(165,066,000)	--	(138,000,000)
TOTAL.....	8,903	739,669,380	8,697	732,386,380	8,340	725,058,380	9,210	696,688,000
(Budget Authority)...	--	(674,214,000)	--	(667,217,000)	--	(657,952,000)	--	(619,993,000)
Preventive Health.....	791	63,493,000	750	64,835,000	750	53,754,000	750	38,407,000
(Budget Authority).....	--	(65,498,000)	--	(64,754,000)	--	(53,669,000)	--	(38,332,000)
Urban Health Projects....	--	9,741,000	--	9,644,000	--	7,300,000	--	---
(Budget Authority).....	--	(9,741,000)	--	(9,644,000)	--	(7,300,000)	--	(---)
Indian Health Manpower...	--	6,460,000	--	6,395,000	--	6,395,000	--	5,418,000
(Budget Authority).....	--	(6,460,000)	--	(6,395,000)	--	(6,395,000)	--	(5,418,000)
Tribal Management.....	--	1,988,050	--	1,968,000	--	500,000	--	---
(Budget Authority).....	--	(1,989,000)	--	(1,968,000)	--	(500,000)	--	(---)
Direct Operations.....	1,454	60,383,000	1,351	57,787,000	1,334	57,787,000	1,187	56,195,000
(Budget Authority).....	--	(60,383,000)	--	(57,787,000)	--	(57,787,000)	--	(56,195,000)
Indian Health Facilities.....	--	---	--	---	--	---	225	2,650,000 4/
(Budget Authority).....	--	(---)	--	(---)	--	(---)	--	(2,650,000)
Total Obligations....	--	883,734,386	--	873,019,380 1/	--	848,694,380 2/	--	799,878,000
(Budget Authority).....	11,150	(810,194,000)	10,681	(807,765,000) 1/	10,344	(783,503,000) 2/	10,351	(733,378,000)
Permanent Authority:								
Operation and Maintenance of Quarters (Reimburs)...	--	(1,000,000)	--	(2,970,000) 3/	--	(2,970,000) 3/	--	(3,000,000)
(Revised Budget Authority)	--	(821,194,000)	--	(810,735,000)	--	(786,473,000)	--	(736,378,000)
(Standard Level User Charge).....	--	($ 4,720,000)	--	($ 4,720,000)	--	($ 4,720,000)	--	($ 4,938,000)

*Excludes 48 reimbursable FTEs in 1986 and 1987.
**Excludes 66 Reimbursable FTEs.

1/ Reflects a reduction of $10,429,000 in Budget Authority and $206,000 in reimbursements pursuant to the Balanced Budget and Emergency Deficit Control Act of 1985, P.L. 99-177.
2/ Includes reductions in budget authority of $10,429,000 required by the Balanced Budget and Emergency Deficit Control Act of 1985, P.L. 99-177, and a proposed rescission of $24,262,000; reductions in reimbursements of $206,000 required by the Balanced Budget and Emergency Control Act of 1985; and $63,000 withheld from obligation as required by Section 515 of the Treasury Postal Service Appropriation Act, 1986, as included in P.L. 99-190.
3/ Reflects a reduction of $10,429,000 in budget authority pursuant to the Balanced Budget and Emergency Deficit Control Act of 1985, P.L. 99-177, and a proposed rescission of $24,262,000.
4/ Reflects a proposed transfer to the Indian Health Appropriation.
5/ Reflects a reduction of $30,000 in reimbursements pursuant to the Balanced Budget Emergency Deficit Control Act of 1985, P.L. 99-177.

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Indian Health
(Facilities)

Obligations by Activity

	1986 Appropriation FTE	1986 Appropriation Amount	1986 After Sequestering FTE	1986 After Sequestering Amount	1986 Revised Estimate FTE	1986 Revised Estimate Amount	1987 Estimate
Hospitals		$36,599,616		$36,444,616		$23,543,616	$---
(Budget Authority)	--	(15,467,000)	--	(15,312,000)	--	(2,411,000)	(---)
Outpatient Care Facilities		12,279,374		12,272,374		11,557,374	---
(Budget Authority)	--	(722,000)	--	(715,000)	--	(---)	(---)
Personnel Quarters		11,302,853		11,246,853		5,676,853	---
(Budget Authority)	--	(5,626,000)	--	(5,570,000)	--	(---)	(---)
Sanitation Facilities		25,588,612		25,339,612		5,883,612	---
(Budget Authority)	(275)	(24,850,000)	(275)	(24,601,000)	(225)	(5,145,000)	(---)
Total Obligations		85,770,455		85,303,455		46,661,455 1/	$---
(Total Budget Authority)	(275)	(46,665,000)	(275)	(4 ,198,000)	(225)	(7,556,000) 1/	($---) 2/

1/ Total reflects a proposed rescission as follows:

Hospitals:	
New & Replacement	-$12,262,000
Modernization & Repair	- 639,000
Total Hospitals	-$12,901,000
Outpatient Care Facilities	- 715,000
Personnel Quarters	- 5,570,000
Sanitation Facilities	- 19,456,000
Total	-$38,642,000

2/ Excludes $2,450,000 for modernization and repair of existing facilities and 225 FTEs for Sanitation Facilities proposed for transfer to the Indian Health Appropriation.

Indian Health

Obligations by Object

	1985	1986	1987
Personnel Compensation:			
Full-Time Permanent	$230,512,703	$244,424,000	$245,196,000
Other than Full-Time Permanent	15,364,167	18,768,000	19,168,000
Other Personnel Compensation	15,281,625	15,151,000	15,151,000
Total Personnel Compensation	281,158,494	278,343,000	279,513,000
Personnel Benefits	60,960,799	61,565,000	62,917,000
Travel and Transportation of Persons	22,644,972	22,779,000	23,021,000
Transportation of Things	6,305,069	6,218,000	6,453,000
Rent, Communications and Utilities:			
Standard Level User Charge	5,335,883	4,770,000	4,988,000
Rental Payments to Others	4,320,977	5,012,000	5,012,000
Communications, Utilities, and Miscellaneous Charges	21,750,860	22,517,000	22,626,000
Printing and Reproduction	1,218,956	1,224,000	1,252,000
Other Services	348,612,077	357,623,256	306,726,000
Supplies and Materials	60,391,618	55,319,124	63,211,000
Equipment	9,985,929	10,695,000	9,588,000
Land and Structures	1,319,332	1,245,000	1,400,000*
Grants, Subsidies and Contributions	15,402,954	11,184,000	10,571,000
Insurance Claims and Indemnities	65,919	---	---
Total Obligations	$839,481,839	$848,696,380 1/	$799,078,000*
Total Budget Authority	($800,567,000)	($783,503,000) 1/	($722,378,000)*
Permanent Authority:			
Operation and Maintenance of Quarters 75X5071 (Reimburs)	709,124	2,970,000 2/	3,000,000
(Revised Budget Authority)	($801,276,124)	($786,473,000)	($725,378,000)

* Includes $2,650,000 for The Indian Health Facilities program proposed for transfer to Indian Health Appropriation.

1/ Includes reductions in budget authority of $10,429,000 required by the Balanced Budget and Emergency Deficit Control Act of 1985, P.L. 99-177, and a proposed rescission of $24,262,000; reductions in reimbursements of $286,000 required by the Balanced Budget and Emergency Control Act of 1985; and $63,000 withheld from obligation as required by Section 515 of the Treasury Postal Service Appropriation Act, 1986, as included in P.L. 99-190.

2/ Reflects a reduction of $10,429,000 in budget authority pursuant to the Balanced Budget and Emergency Deficit Control Act of 1985, P.L. 99-177, and a proposed rescission of $24,262,000.

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Indian Health
(Facilities)

Obligations by Object

	1985	1986	1987
Program and Financing			
Total obligations	$58,660,285	$46,661,455	$ ---
Unobligated balance, start of year	-36,131,740	- 39,105,455	---
Unobligated balance, end of year	39,105,455	---	---
Appropriation	61,634,000	7,556,000	---
Personnel compensation:			
Positions other than permanent	$ 3,860,498	$ ---	$ ---
Other personnel compensation	770,182	---	---
Total personnel compensation	4,630,680	---	---
Personnel benefits	372,324	---	---
Travel and transportation of persons	713,527	---	---
Transportation of things	1,024,204	---	---
Rent, communications, and utilities:			
Communication, utilities, and miscellaneous charges	239,451	---	---
Printing and reproduction	22,600	---	---
Other services	10,081,892	2,551,551	---
Supplies and materials	5,632,103	1,900,000	---
Equipment	2,474,713	4,244,039	---

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Indian Health
(Facilities)

Obligations by Object

	1985	1986	1987
Lands and structures.....	$33,466,424	$37,965,865	---
Insurance Claims and Indemnities.	2,367	---	---
Total obligations.....	$58,660,285	$46,661,455 1/	$ --- 2/
(Total budget authority).....	($61,634,000)	($ 7,556,000) 1/	($ ---) 2/

1/ Reflects a reduction of $467,000 pursuant to the Balanced Budget and Emergency Deficit Control Act of 1985, P.L. 99-177 and a proposed rescission of $38,642,000.

2/ Excludes $2,450,000 for modernization and repair of existing facilities proposed for transfer to the Indian Health Appropriation.

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INDIAN HEALTH

FTEs by Activity

Activity	1986 Approp.	1986 after Sequestering	1986 Revised Estimate	1987
Clinical Services:				
IH and Tribal Health Delivery...	8,967 1/	8,745 1/	8,608 1/	8,258 1/
Contract Care.....	--	--	--	--
Total.....	8,967	8,745	8,608	8,258
Preventive Health.....	791	750	750	750
Urban Health Projects.....	--	--	--	--
Indian Health Manpower.....	--	--	--	--
Tribal Management.....	--	--	--	--
Direct Operations.....	1,456	1,234	1,234	1,167
Indian Health Facilities.....	--	--	--	225 2/
Total.....	11,214 1/	10,729 1/	10,592 1/	10,400 1/

1/ Includes an estimated 64 FTEs for reimbursement agreements with other agencies in the FY 1986 Appropriation, and 48 FTEs in FY 1986 after Sequestering, 1986 Revised Estimate, and FY 1987.

2/ Represents 225 FTEs proposed for transfer to the Indian Health Appropriation for the Sanitation Facilities Construction Program in FY 1987.

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Budget Authority by Activity

	1986 Appropriation	1986 Available after Sequestering	1986 Revised Estimate	1987
Hospital & Health Clinic Program	$433,598,000	$429,007,000	$422,216,000	$409,614,000
Maintenance & Repair	8,621,000	8,535,000	8,535,000	9,025,000
Dental Services	25,879,000	25,620,000	25,620,000	25,692,000
Mental Health	11,449,000	11,334,000	11,334,000	11,399,000
Alcoholism	24,627,000	24,381,000	24,381,000	26,243,000
Contract Care	170,040,000	168,340,000	165,866,000	138,000,000
Total Clinical Services	674,214,000	667,217,000	657,952,000	619,993,000
Sanitation	20,804,000	20,596,000	20,596,000	21,334,000
Public Health Nursing	12,441,000	12,317,000	12,317,000	12,851,000
Health Education	3,616,000	3,578,000	3,578,000	3,742,000
Community Health Representative	25,844,000	25,585,000	14,500,000	---
Hepatitis B Screening & Immunization Program (Alaska)	2,705,000	2,678,000	2,678,000	395,000
Total Preventive Health	65,408,000	64,754,000	53,669,000	38,322,000
Urban Health Projects	9,741,000	9,644,000	7,200,000	---
Indian Health Manpower	6,460,000	6,395,000	6,395,000	5,418,000
Tribal Management	1,988,000	1,968,000	500,000	---
Direct Operations	60,383,000	57,787,000	57,787,000	54,195,000
Indian Health Facilities	---	---	---	2,450,000
Subtotal, Appropriation	818,194,000	807,765,000	783,503,000	722,378,000
Permanent Authority: Operation and Maintenance of Quarters (Reimburs)	3,000,000	2,970,000	2,970,000	3,000,000
Adjusted Appropriation	$821,194,000 3/	$810,735,000 1/ 3/	$786,473,000 1/ 2/ 3/	$725,378,000 4/

1/ Reflects a reduction of $10,629,000 budget authority and $30,000 in reimbursements sequestered pursuant to the Balanced Budget Emergency Deficit Control Act of 1985, P.L. 99-177.

2/ Reflects a proposed rescission of $24,262,000 as follows: Hospital and Health Clinic, $6,791,000; Contract Health Care, $2,674,000; Community Health Representatives, $11,085,000; Urban, $2,444,000; Tribal Management, $1,468,000.

3/ Excludes $48,700,000 reimbursements estimated to be collected in 1986.

4/ Excludes $73,700,000 reimbursements estimated to be collected in 1987.

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Indian Health Facilities

Budget Authority by Activity
Summary of Projects FY 1985 - 1987
(Dollars in thousands)

Project	1985 Appropriation	1986 Appropriation	1986 After Sequestering	1986 Revised	1987 Request
Hospitals:					
New and Replacement:					
Crownpoint, NM-Repl-Construction and Equipment Complete Facility 1/	$ 8,883	$ ---	$ ---	$ ---	$ ---
Kanakanak, AK-Repl-Construction and Equipment Complete Facility 2/	5,054	---	---	---	---
Rosebud, SD-Repl-Site Work ($1,006,000), Phase I Construction and Long-lead Equipment 3/	1,006	10,408	10,304	---	---
Sacaton, AZ-Repl-Partial Phase I Construction 4/	4,900	---	---	---	---
Kotzebue, AK-Repl-Planning & Design 5/	---	1,978	1,958	---	---
Subtotal, New & Replacement	19,843	12,386	12,262	---	---
Modernization and Repair:					
Ada, OK Hospital	115	---	---	---	---
Gallup, NM Hospital	784	---	---	---	---
Keams Canyon, AZ Hospital	314	---	---	---	---
Phoenix, AZ Hospital	264	---	---	---	---
Talihina, OK Hospital	218	---	---	---	---
Whiteriver, AZ Hospital	391	---	---	---	---
Ft. Defiance, AZ Hospital	---	1,292	1,278	639	---
Belcourt, ND Hospital	---	696	689	689	---
Albuquerque Area Hospitals (Zuni, Acoma-Canoncito-Laguna, Santa Fe, and Albuquerque)	---	420	416	416	---
Bethel, AK Hospital-Personnel Qtrs	---	497	492	492	---
Colville, WA Health Center	---	176	175	175	---
Subtotal, Modernization & Repair	2,086	3,081	3,050	2,411	---
Total Hospitals	21,929	15,467	15,312	2,411	---

Indian Health Facilities

Budget Authority by Activity
Summary of Projects FY 1985 - 1987
(Dollars in thousands)

Project	1985 Appropriation	1986 Appropriation	1986 After Sequestering	1986 Revised	1987 Request
Outpatient Care Facilities:					
Ft. Thompson, SD-Repl-Construction and Equipment Complete facility 6/	$ 3,249	$ ---	$ ---	$ ---	$ ---
Kyle, SD-Repl-Construction and Equipment Complete facility 7/	3,009	---	---	---	---
Wagner, SD-Complete Planning 8/	---	100	99	---	---
Wolf Point, MT-Repl-Construction and Equipment 9/	3,454	---	---	---	---
Toppenish, WA-Repl-Planning 10/	---	622	616	---	---
Total Outpatient Care Facilities	9,712	722	715	---	---
Personnel Quarters:					
Tuba, AZ-Plan, Construct and Equip 23 Units of Quarters 11/	2,141	---	---	---	---
Crownpoint, NM-Plan, Construct and Equip 36 Units of Quarters 11/	3,352	---	---	---	---
Kanaksnak, AK-Plan, Construct and Equip 26 Units of Quarters	---	4,175	4,133	---	---
Ft. Thompson, SD-Plan, Construct and Equip 13 Units of Quarters	---	1,292	1,279	---	---
Sacaton, AZ-Renovate 8 Existing Qtrs	---	159	158	---	---
Total Personnel Quarters	5,493	5,626	5,570	---	---
Sanitation Facilities	24,500	24,850 12/	24,601	5,145	---
(Number of Homes New & Improved)	(3,000)	(2,880) 12/	(2,850)	(650)	(--)
(Number of Homes Existing)	(270)	(--)	(--)	(--)	(--)
Total Indian Health Facilities	$61,634	$46,665	$46,198	$7,556 13/	$ --- 14/

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1/ Crownpoint, New Mexico - Funds were appropriated in FY 1985 to complete construction and to equip a 37-bed replacement hospital at Crownpoint, New Mexico. A construction contract was awarded in December 1984, and construction is projected to be completed about January 1987.

2/ Kanakanak, Alaska - Funds were appropriated in FY 1985 to complete construction and to equip a 10-bed replacement hospital at Kanakanak, Alaska. A construction contract was awarded in June 1985, and construction is expected to be completed mid FY 1987.

3/ Rosebud, South Dakota - $1,248,000 was appropriated in FY 1982 for planning, $1,006,000 in FY 1985 for construction sitework, and $10,304,000 (after sequestering) in FY 1986 for initial construction for a replacement hospital at Rosebud. Funds for FY 1986 are proposed for rescission. IHS awarded a P.L. 93-638 design contract for a 25-bed replacement hospital, with a potential to be expanded to 35 beds, to the Rosebud Sioux tribe in August 1984, and the tribe awarded a sub-contract for architectural/engineering services in November 1984. Design is currently in the "final drawings" stage, and the tribe has been awarded a P.L. 93-638 sitework contract.

4/ Sacaton, Arizona - A design contract was awarded in April 1984 for a 20-bed replacement hospital at Sacaton, Arizona, and the design is now essentially completed. $4,900,000 is available to begin construction in 1986.

5/ Kotzebue, Alaska - $1,958,000 was appropriated (after sequestering) in FY 1986 for design, and this amount is being proposed for rescission. A draft program information document (PID) has been developed for a 17-bed replacement hospital at Kotzebue, and alternative site possibilities are now being reviewed prior to completing the PID.

6/ Ft. Thompson, South Dakota - $200,000 was appropriated in FY 1984 for design and $3,249,000 in FY 1985 for construction of a replacement health center at Ft. Thompson, South Dakota. A design contract was awarded in December 1984, and design is now essentially completed.

7/ Kyle, South Dakota - $200,000 was appropriated in FY 1984 for design and $3,009,000 in FY 1985 for construction of a replacement health center at Kyle, South Dakota. A PID was approved in 1984, but initiation of design was delayed while the tribe considered proposing to perform the design under P.L. 93-638. The Seattle regional engineering office is currently negotiating the design contract with an architectural/engineering firm.

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8/ Wagner, South Dakota - $360,000 was appropriated in FY 1984 for design and $99,000 (after sequestering) in FY 1986 to complete design of a new health center at Wagner, South Dakota. Funds for FY 1986 are proposed for rescission. A PID has not yet been approved.

9/ Wolf Point, Montana - $200,000 was appropriated in FY 1984 for design and $3,454,000 in FY 1985 for construction of a replacement health center at Wolf Point, Montana. A PID was approved in 1984, and the tribe recently received approval to design the replacement facility under P.L. 93-638.

10/ Toppenish, Washington - $616,000 was appropriated (after sequestering) in FY 1986 for design, and this amount is being proposed for rescission. A draft PID has been developed for a replacement health center at Toppenish, and alternative site possibilities are now being reviewed prior to completing the PID.

11 Tsaile, Arizona and Crownpoint, New Mexico - $2,141,000 was appropriated in FY 1985 for planning, construction, and equipment for 23 units of quarters at the health center at Tsaile, Arizona. $3,352,000 was appropriated in FY 1985 for planning, construction, and equipment for 36 units of quarters at the hospital at Crownpoint, New Mexico. Design should be completed by March 20, 1986 and start of construction is estimated to begin June 1, 1986 for quarters at Tsaile and Crownpoint.

12/ Includes $4,970,000 for the construction of sanitation facilities to approximately 300 new homes in support of the Navajo and Hopi Indian Relocation Act.

13/ Reflects a proposed rescission of $38,642,000.

14/ Excludes $2,450,000 for the Indian Health Facilities Program proposed for transfer to the Indian Health Appropriation.

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DEPARTMENT OF HEALTH AND HUMAN SERVICES
INDIAN HEALTH

APPROPRIATION TITLE: Indian Health

Personnel Summary

	1986 Revised Estimate	1987 Estimate	Increase or Decrease
Total number of permanent positions.....	11,589 1/	11,589 1/	--
Full-time equivalent of other positions.	724	914 2/	+190
Total compensable work-years.....	10,592 3/	10,400 2/3/	-192
Average GS grade.....	7.1	7.1	--
Average GS salary.....	$22,440	$22,712	+$272
Average salary of ungraded positions....	$23,516	$23,753	+$237

1/ Includes 54 positions for reimbursement agreements with other agencies.
2/ Includes 225 FTEs for construction of Sanitation Facilities from the Indian Health Facilities program proposed for transfer to the Indian Health Appropriation.
3/ Includes 48 FTEs for reimbursement agreements with other agencies.

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Indian Health
(Facilities)

Personnel Summary

	1986 Revised Estimate	1987 Estimate	Increase or Decrease
Full-time Equivalent of All Other Positions.....	225	-- 1/	-225
Total Compensable Work Years.....	225	--	-225

1/ Excludes 225 full-time equivalents proposed for transfer to the Indian Health Appropriation.

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Indian Health
(Facilities)

Unobligated Balance by Activity
and Total Available FY 1986

Activity:	Unobligated Balance End of FY 1985	1986 Revised Estimate	1986 Estimated Obligations
Hospitals.....	$21,132,616	$2,411,000	$23,543,616
Outpatient care facilities.....	11,557,374	---	11,557,374
Community facilities.....	---	---	---
Sanitation facilities.....	738,612	5,145,000	5,883,612
Personnel quarters.....	5,676,853	---	5,676,853
Total Estimate.....	$39,105,455	$7,556,000 1/	$46,661,455

1/ Reflects a reduction of $467,000 pursuant to the Balanced Budget and Emergency Deficit Control Act of 1985, P.L. 99-177 and a proposed rescission of $38,642,000.

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Significant items in House, Senate and Conference
Appropriation Committee Reports

Item	Action Taken or to be Taken
1986 House Report No. 99-205	
Indirect Costs	
The recommendation includes the budgeted increase of $5,000,000 for indirect costs required for tribal health programs contracted under P.L. 93-638. The Committee understands that this amount may not be adequate to meet the shortfall in indirect costs, and directs IHS to inform the Committee by March 1, 1986 of additional cost requirements for this purpose. It is expected the Department will seek supplemental funding to meet these requirements, in accordance with the terms of P.L. 93-638	A separate report will be provided to the Committeed by March 1, 1986.
FY 1986 Senate Report No. 99-141	
Allocation of Funds (CHAP)	
The Committee continues to strongly support the Community Health Aide Program (CHAP) in Alaska. Native health corporation such as the Yukon-Kuskokwim Health Cooperation have recently undertaken impressive initiatives to improve CHA training and expand the range of services provided by CHA's and the State of Alaska has provided supplemental funding in recognition of the program's central role in the overall health care delivery system in rural areas. In allocating funds, the Committee directs the Indian Health Service to recognize the vital importance of CHAP in Alaska.	The CHAP Program, the value of which has been long recognized by IHS, will be continued.

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FY 1986 Senate Report No. 99-141

Alcoholism Program Review

Rather than increasing the allowance for alcoholism to establish a new program of substance abuse as provided by the House, the Committee recommends that the Indian Health Service review the entire program to determine if a competitive grant program for alcohol and/or substance abuse might be preferable to the current system. A number of alcoholism programs currently funded by IHS have received Federal support for almost 15 years, yet the Indian Health Service has just recently completed its first comprehensive evaluation of the program. Until the committee has had an opportunity to review the evaluation, program expansion at this time cannot be supported.

Action Taken or Planned

At the direction of the Director, Indian Health Service, a comprehensive program appraisal of the IHS efforts to address the problem of alcohol abuse and alcoholism in American Indians and Alaska Natives was undertaken in FY 1985. The purpose of the review was to accomplish the following: 1) define the scope of alcoholism treatment and prevention efforts at the tribal as well as IHS Service Unit, Area, and Headquarters administrative levels; 2) identify existing program strengths; 3) identify those unique programmatic approaches in various locations that warrant broader application; 4) identify deficiencies that may exist in the overall alcoholism program; 5) set forth action steps appropriate to addressing any deficiencies; and 6) make recommendations regarding the mission and future directions of the IHS alcoholism program effort.

An analytical methodology that focused on all functional activities necessary to operate a successful alcoholism program was applied. This entailed using a model which included nine essential functional activities that relate to management of any service program.

These included:

planning	evaluation
standard setting	coordination
training	resource management
operations	monitoring
research	

Recommendations from the review conducted by tribal and outside professionals have been put into an Action Plan and arebeing reviewed by the Indian Health Service. The action items will become part of a five-year plan for the Alcoholism Program. This effort will include the contracts/grants process and resources allocation. The evaluation and resultant plan will be made available to the Congress.

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FY 1986 Senate Report No. 99-141	Action Taken or Planned
Allocation of Contract Care Funds	
Expenditures for contract care have increased almost 75 percent since fiscal year 1980. In the last 5 years Congress has also appropriated in excess of $131,000,000 for construction of new and replacement hospitals and clinics. These new facilities have provided expanded direct IHS services to a number of Indian Health Service beneficiaries, thus reducing the requirement for contract care funds in those locations. Indian Health Service has, however, continued to distribute contract care funds based on historical levels rather than redistributing available resources when new facilities are opened. This has led to a distortion of the types of services provided through contract care from area to area. The Committee directs the Indian Health Service to make adjustments in the allocation of contract care funds, now and in the future, to address these imbalances.	The IHS has developed and currently considers utilization based criteria for allocation purposes. These criteria will continue to be refined and when appropriate, phased into the allocation process.
Reprogramming to Avert Close Down of a Construction Project	
In excess of $15,000,000 will remain unexpended at the end of fiscal year 1986 in the "Hospitals and clinics" account. Should some projects proceed faster than expected, the Indian Health Service should seek reprogramming authority to avert any close down of a construction project.	The IHS will seek reprogramming of funds, if available, as necessary.

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FY 1986 Conference Report No. 99-450	Action Taken or to be Taken
Rosebud or Pine Ridge Surgical Site	
Bill language has been included directing that the Rosebud, S.D. hospital be designed and built with a capacity of 35 beds. The managers believe that there is a need for a surgical suite at either Rosebud or Pine Ridge to provide improved health care in that area. The Indian Health Service shall submit a report to the House and Senate Committees on Appropriations with recommendations as to the better location for a surgical unit within 90 days of enactment of this Act.	A separate report will be provided to the Committee by March 1986.
Construction Sacaton, AZ. Hospital	
The managers must again express their dissatisfaction with the slow progress made by HHS, PHS, HRSA and IHS in moving ahead with construction projects for which funds have been provided. Initial planning funds were provided for the Sacaton, AZ. hospital in fiscal year 1982 and the design for this project has yet to be completed despite continued funding and support from the Congress. IHS is directed to expedite this project and to notify the Committees on Appropriations as soon as the design is complete and the project is ready for bid.	The Indian Health Service will expedite the preparation of a Status Report on the Sacaton Project.

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FY 1986 Conference Report No. 99-450	Action Taken or to be Taken
Methodology To Determine If Surgical Capacity Should Be Provided in New/Replacement Facilities	
At the request of the subcommittees, the Office of Technology Assessment conducted a limited survey of the methodology employed by the Indian Health Service to determine if surgical capacity should be provided in new and replacement facilities. The survey identified several shortcomings in the current IHS application of the planning procedure. The Indian Health Service shall submit a report to the Interior appropriations subcommittees detailing the present system and any proposed changes to the system by March 31, 1986. Further, IHS is directed to employ the methodology uniformly with respect to all hospital construction projects.	The Indian Health Service is reviewing the present system and will evaluate the shortcomings identified in this system. A report will be prepared and provided to the Committee by March 31,1986.
Construction of Water and Sewer Facilities	
The managers agree that within the amount provided for sanitation, $5,000,000 is available for construction of water and sewer facilities on the new lands acquired pursuant to the Navajo and Hopi Indian Relocation Act.	The IHS has been coordinating with the Navajo-Hopi Indian Relocation Commission (NHIRC) and the Bureau of Indian Affairs for many years regarding the provision of sanitation facilities to Indian homes. The NHIRC is currently determining the availability of water in the new lands and when this is completed housing site locations will be determined. Depending upon the availability of water and the density of the housing, IHS will be able to utilize the $5,000,000 to provide sanitation facilities to 300-400 new relocatee homes in the new lands.

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FY 1986 Conference Report No. 99-450	Action Taken or to be Taken
Pine Ridge, SD Site Work, Shiprock, NM Major Modernization	
The Managers have not provided funds for sitework at Pine Ridge, SD, and design of the major modernization of the Shiprock, NM hospital only because of delays in schedules and the need to complete other projects already under construction before proceeding with additional projects. However, the managers are committed to proceeding with these projects at the earliest possible opportunity.	The PHS, HRSA, and IHS are implementing revised procedures to immediately expedite and improve the planning and design of Indian Health facilities. The IHS has also initiated a realignment of staff at Headquarters to consolidate and improve the IHS abilities to plan and construct the facilities.
Unobligated Balances	
The managers agree that the IHS shall report to the Committees any unobligated balances remaining available at the completion of a construction project before using such balances for other projects.	A quarterly report will be prepared and forwarded to Congress.
Judgment Seattle Indian Health Board	
Administrative Provisions Earmarks $180,000 of prior year funds to settle a claim against the Seattle Indian Health Board as proposed by the Senate instead of $270,000 plus interest as proposed by the House.	The Seattle Indian Health Board will file a claim with the IHS Portland Area office for this amount. The IHS will request the Office of General Council to contact the Kobe Park Building Company and the Seattle Indian Health Board to initiate negotiation of a settlement.

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Other Significant Items

FY 1985 House Report No. 98-886	Action Taken or to be Taken
Unmet Health Care Needs The Committee understands that the Indian Health Service is updating its estimates of the unmet health care needs of the Indian People, as well as the funding that would be required to bring the level of Indian Health care services up to "parity" with the U.S. population in general. The Committee expects the results of this effort to be submitted to the Committee as soon as they are available. A summary of this information, and a discussion of how the unmet need and lack of "parity" are being addressed in the budget as proposed to the Congress, should be included in the fiscal year 1986 budget justification.	At hearings before the House Committee on Appropriations in the spring of 1984, the Administrator of the Health Resources and Services Administration testified that disparity between the IHS user population and the U.S. population had increased steadily since the late seventies. Per capita expenditures for the IHS service population, for example, had declined from 75 percent to almost half of the national level. The Committee responded to the Administrator's testimony by directing in House Report 98-886 that "... the funding that would be required to bring the level of Indian health care services up to 'parity' with that of the U.S. population in general .." be identified. The Appropriations Committee directive has encouraged IHS to review it program thoroughly at a critical juncture for health care delivery in general. This status report describes how IHS is responding to the Committee's directive by issuing a report to Congress in May, 1986 that estimates IHS' parity funding requirement within the context of a comprehensive review of its service priorities. The report will document IHS achievements, identify areas where current IHS activities need improvement, and lay the groundwork for ongoing strategic and operational planning, applied research, and management improvements.

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HIGHLIGHT STATEMENT

The Indian Health Service (IHS) is the component of the Department of Health and Human Services charged with administering the principal Federal health programs for American Indians and Alaska Natives. The IHS is a unique health delivery system which provides comprehensive health services to approximately one million American Indian people and Alaska Natives living on or near Federal Indian reservations or in traditional Indian country such as Oklahoma and Alaska.

The organization and delivery of health care by the IHS has its basis in treaties and laws enacted by the Congress and judicial rulings. The Snyder Act of 1921, IHS' authorizing legislation, linked IHS services to congressional appropriations providing for the use of "...such monies as the Congress may from time to time appropriate, for the benefit, care, and assistance of Indians..." The Congress has authorized services primarily to members of Federally-recognized tribes who live on or near reservations, or in traditional Indian country.

The goal of the IHS is to elevate the health of American Indian and Alaska Native people to the highest possible level. Its mission is threefold: 1) to provide and/or assure the availability of high quality comprehensive, accessible health services, 2) to provide increasing opportunities for Indians to manage and operate their own health programs, and 3) to serve as an advocate for Indian people.

Since the transfer of Indian health programs from the Department of Interior to the Public Health Service in 1955, this comprehensive health delivery system has developed into two basic modes of delivery. Direct health services are provided through the operation of 45 hospitals, 71 health centers and several hundred smaller health stations and satellite clinics. The tribal health delivery system administered by tribes and tribal groups through contracts with the IHS operates 6 hospitals and approximately 250 health clinics. The purchase of medical care from non-IHS and non-tribal providers is designated contract health services. Contract health services represent supplemental services either not available in IHS' direct or tribal facilities or in locations where no IHS or tribal facility exists. The IHS has approximately 1,300 contracts with private providers (primarily for the delivery of specialty care). In addition, various clinical and referral services are provided to Indians in urban settings through 37 urban health projects.

This complex system provides high quality preventive, curative, rehabilitative, and environmental health services to the eligible Indian and Alaska Native population. The "hospital and health clinics" budget component is the primary funding source for the delivery of inpatient and ambulatory general patient care, psychiatry, ophthalmology, diabetes program, emergency medical services, laboratory, and radiology and other special services.

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Preventive health services are provided through the Environmental Health, Public Health Nursing, Health Education, Community Health Representative and Hepatitis B Screening and Immunization programs. These programs include such services as community injury control, water supply surveillance, prenatal care, maternal and child health services, well child clinics, family planning, care of high risk mothers and infants, school health and immunizations.

The IHS has identified three broad ongoing areas of focus for strengthening the overall program. These are in the areas of health services emphasizing health promotion and disease prevention activities; management improvements; and Indian self-determination activities.

In FY 1985, the prevention activities of the health delivery system received increased attention. These enhancements were reflected in: planning for health promotion and disease prevention services such as increased activities promoting physical fitness programs; services delivery; and increasing community awareness of lifestyle as a determinant of health in those locations served by IHS. These activities will be strengthened in 1986. Although results of such programs are not easily demonstrable, it is expected that these activities will continue to have a significant impact on the health of the population served.

Continued advancements in disease control and health promotion/disease prevention have been recorded with particular accomplishments occurring in infant and maternal mortality rates. Planning for health promotion and disease prevention (HP/DP) was enhanced significantly in FY 1985. Specifically, national planning meetings were held in Albuquerque, New Mexico, and Billings, Montana, to identify health outcome targets for IHS that are most relevant to American Indian and Alaska Native people. These meetings involved staff from all levels of the organization. National health outcome targets, as well as targets for communities and areas, have been formulated and disseminated. An evaluation project to refine monitoring systems for HP/DP is in progress.

One program, the Zuni Fitness Program, believed to be the only example of its kind in the United States, has demonstrated that 20 patients with diabetes were able to discontinue medication and yet achieve control of blood sugar. This community program has enormous importance for the United States public.

Service provision in the areas of classic disease prevention continued undiminished in FY 1985. The Hepatitis B control program in Alaska has reached all of the high risk villages and has the very real potential for eradicating this disease in Alaska Native communities. The approach used in this activity is unique in the world and communicable disease experts internationally are monitoring its performance. After two years of operation there already appears to have been a dramatic decrease in the attack rate of hepatitis from approximately 240 to 10 per 100,000 population.

In FY 1985, immunization activities continued to reach 85 percent of the children in the appropriate age groups. In the last quarter of FY 1985, 91 percent of children 16-27 months of age were appropriately immunized for mumps, measles, and rubella. Almost 95 percent of children age 3-27 months of

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age have received the requisite number of doses of oral polio vaccine in the same time period. Many DTP immunizations were deferred because of the national vaccine shortage early in the fiscal year. This level of immunization of Indian children is substantially above the national average.

Increasing community awareness of lifestyle as a determinant of health status is reflected in the health promotion activities burgeoning in Indian communities. Examples are found in fitness programs, weight control programs, mental health and stress reduction programs, community injury control, and substance abuse programs. This awareness is keynoted by the strong community support for the designation of IHS facilities as smoke-free. The IHS, with the active participation of Indian tribes, has moved rapidly to implement a smoke-free environment program in more than 150 of its facilities. The extent of the smoke-free policy of IHS is again unique and has received national recognition from such organizations as the American Cancer Society.

Health promotion and disease prevention enhancement has altered some programs more significantly than others. The Alcohol Program Branch underwent an evaluation in FY 1984 and a total program review in FY 1985. The recommendations from the evaluation and review have led to a restructuring of the substance abuse efforts of IHS. Specifically, prevention services aimed at youth, rather than a predominance of treatment services for middle-aged alcoholics will be the primary focus of the program activities. This is a major change that will affect resource management and allocation in FY 1986.

In summary, health services have been significantly strengthened in FY 1985. This is primarily attributable to the robust resurgence of classical prevention approaches and the initiation of effective health promotion activities. This aggressive health program enrichment will continue in FY 1986.

The equitable distribution of resources for health services continues to be a high priority of the IHS. A major objective of the IHS is the elimination of inequity. The IHS has made substantial progress towards equitable distribution of resources and the improvement of access to health services. In FY 1981, the Equity Health Care Fund (EHCF) was established to provide priority funding to those tribes with the greatest level of resource deficiency. During the ensuing four year period, the IHS distributed $32.3 million of equity funds to those tribes with the greatest level of resource deficiency. By FY 1984, the EHCF program has achieved its objective to insure that no tribe had an overall deficiency greater than 60 percent. In FY 1984, the IHS continued the equity process by utilizing a resource allocation formula to distribute $41,800,000 to areas based upon their relative level of resource deficiency. In FY 1985, an additional $5 million was made available to continue the progress towards the equitable allocation of resources. In FY 1986, using increasingly refined analyses, and focusing on actual facility use combined with certain estimates of disease severity (e.g. death rates), an additional amount will be distributed as part of this overall effort.

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A major activity of the IHS in FY 1986 will be a comparative assessment of the resource needs of the IHS and tribally operated program. The Resource Requirements Methodology (RRM) is the primary instrument for conducting the comparative assessment of the resource needs of the IHS and tribally operated service units. The intent of this initiative is to identify funding disparities among the IHS and tribally operated health programs, and to ultimately eliminate such disparities. Multiple operational indicators such as actual workload, user population, existing resources and the RRM requirements have been assembled and analyzed. The results of the RRM analyses will be compared to the actual level of funding and will be utilized for possible allocation of a specified level of FY 1986 cost increases for hospitals and health clinics, contract health service and dental.

In addition to the issue of avoiding unfair inequity in the delivery of health services within the IHS, the IHS is studying the issue of "parity" of Indian health resources to those of the general population. In FY 1985, the IHS created an interagency task force of experts to advise it in defining and measuring the extent of disparity between Indian health resources and those of the general population. The IHS will issue a report in FY 1986 that estimates its parity funding requirement within the context of a comprehensive review of its service priorities. The report will document IHS achievements, identify areas where current IHS activities need improvement, and lay the groundwork for ongoing strategic and operational planning, applied research, and management improvements. This effort is being made to identify the level of resources necessary to assure a health status for Indians which is at parity with that of the general population.

The provision and maintenance of quality clinical health care continues to be the highest priority of the IHS. The standards set forth by the Joint Commission on Accreditation of Hospitals (JCAH) and the Medicare standards established by the Health Care Financing Administration (HCFA) are utilized as the measure of the quality of clinical care provided through the IHS and tribally operated health facilities. Currently, 37 of the 45 hospitals operated by the IHS and the six hospitals operated by the tribes are JCAH accredited. In addition, 34 free standing health centers are accredited by the JCAH. In certain areas the criteria for care in the IHS exceeds the standards set by accrediting agencies.

During FY 1986, it is estimated that up to $44.1 million may be collected from Medicare and Medicaid. The major uses of Medicare/Medicaid expenditures in FY 1985 were in the areas of personnel, contracts, facilities maintenance and repair, and equipment costs. In FY 1986, each IHS Area will target their funds to facilities most in need based on the origin of the collected funds and the facilities' annual plans for correction of deficiencies.

The FY 1987 budget request takes into consideration a recent study commissioned by the Department of Health and Human Services (DHHS) projecting that IHS should be able to garner $64 to $72 million in Medicare/Medicaid reimbursements during FY 1987.

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The second broad area of focus for strengthening the IHS program has been in the area of management improvements. The Director, IHS, has instituted an operational philosophy that requires close scrutiny of the IHS program to enable the continued provision of high quality health care to American Indians and Alaska Natives in the most cost effective manner. This process of ongoing oversight of the IHS program from a management perspective has resulted in signifi ant accomplishments. It is felt that an efficient mix of direct and contracted health care services is desirable and possible with the implementation of the improved management information system within IHS. The integration of IHS resources with existing and planned community facilities can yield economies without diminishing the quality of health care.

In an effort to more precisely identify the eligible population and to maintain records of eligibility for alternate resources, the IHS implemented a Patient Registration System in January 1984. Major progress has been made in the implementation of this system. As of January 1986, 591,480 patients have been registered. This represents approximately 59 percent of the estimated IHS service population for FY 1986. The table below compares by Area the number of registered patients with the estimated 1986 service population:

AREA	1986 POPULATION (EST.) 1/	REGISTERED PATIENTS
Aberdeen	74,781	8,031
Alaska	75,461	75,461
Albuquerque	53,771	37,406
Bemidji	49,550	33,493
Billings	42,594	42,594
California	75,306	26,640 2/
Navajo	171,097	140,060
Nashville	37,025	14,464
Oklahoma	200,488	116,277
Phoenix	86,826	73,911
Portland	101,275	7,550
Tucson	18,843	15,593
TOTAL	987,017	591,480

1/ Estimation is based upon 1980 Census adjusted by the projected natural change (births minus deaths).

2/ Based on a special count of users from the individual California Tribal Projects.

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Progress in the implementation of this activity has not proceeded at the same rate in all Areas. However, either an automated or manual version of the system is now in operation throughout the IHS. The above figures represent patients that have been seen and registered in IHS facilities for at least one visit/encounter since January 1, 1984.

Patient registration is a dynamic and ongoing program that serves as the central core for the IHS automated management system. It is 100 percent operational throughout the IHS.

A major initiative involves introduction of a services based accounting system into the Resource Patient Management System by the end of FY 1986. Without implementation of the system, IHS managers would be hampered in their efforts to insure the responsible management and expenditure of federal funds. Up to $2 million for the continuation of the automation of IHS and tribal/638 facilities and to complete the installation of the services based accounting system in 12 IHS hospitals has been specifically earmarked in FY 1986. Up to $2.5 million for the completion of the automation of the remainder of the IHS and tribal/638 facilities and the completion of the installation of the services based accounting system in the remaining IHS hospitals has been specifically earmarked in FY 1987.

During FY 1984, the IHS reorganized its Headquarters operation. Major changes were made in the management structure, and the senior management staff of the IHS as a result of the realignment. The reorganization has resulted in a more responsive organization and has led to significant improvements in the overall management of IHS. The span of control of the Director, IHS, has been significantly reduced, thus enabling him to spend more time on matters related to the long-range planning and direction of the IHS. The benefits derived from the reorganization positively contributed to the effective management of the IHS. Internal management improvements with respect to space allocation, travel, consulting services, printing and publications, equipment, supplies, telecommunications and other overhead items are expected to result in some cost savings.

In addition to the management improvements in Headquarters, reviews were made of the IHS field organization. The review of every IHS Area/Program Office has resulted in a series of recommendations directed at improving the overall effectiveness and efficiency of the field organization. In FY 1986, the IHS will conduct program reviews at six Area/Program Offices. Concurrently, the IHS is conducting an analysis of the staffing patterns of its Area/Program Offices. The likely result of this comparative assessment will be changes in the allocation of staff to affect a more equitable staff distribution among Area/Program Offices. In regard to the staffing of IHS facilities with qualified Indians, the IHS has taken action to assure that funds for the recruitment of Indian health manpower into the IHS are allocated to students in health profession disciplines which are in shortage for the IHS.

New management initiatives within the IHS for FY 1987 include the implementation of a phased allocation plan for distribution of financial resources. The IHS will be able to provide better health care for Indian people if its resources are distributed to correct inequities in funding among Headquarters and the 12 Areas. The phased redistribution of resources will be based on documented health deficiencies among Headquarters and the Areas, and should be completed in FY 1990.

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The third broad focus in strengthening the overall program is in the area of Indian self-determination activities. It has been a decade since the passage of P.L. 93-638, the Indian Self-Determination and Education Assistance Act. In this period the IHS has made significant progress towards the IHS mission of providing increasing opportunities for Indians to manage and operate their own health programs. The IHS appropriation includes total funds available for IHS direct and tribally managed programs, as identified by activity in the IHS budget structure. There is no specified amount appropriated for tribal administrative costs, and IHS does not separately allocate funds to Area/Program Offices for these types of costs. Therefore, when a tribe contracts a program under P.L. 93-638, both direct and indirect costs are funded from the total amount of funds identified to support the contracted program. Additional tribal administrative costs can include certain costs that do not appear anywhere in the IHS budget but which the contractor must incur. These are referred to as non-federal operation costs. For example, the government is a self-insurer, but if a tribe contracts an IHS function under P.L. 93-638, the tribe must purchase liability insurance (e.g. malpractice insurance). Indirect costs include expenditures such as compensation for injury, employee benefits, audits, tribal health department structure, financial management systems, and personnel systems, etc.

The FY 1987 budget request of $720 million for Indian health reflects a decrease of over $87 million from the 1986 appropriation, which includes the effect of the sequestration of $10.4 million but not the proposed rescission. The budget decrease is largely attributable to the proposed discontinuation of funding for the CHR, Urban and Tribal Management programs. Program decreases are also proposed for the clinical services programs and reflects funding part of the built-in cost increases from projected increased reimbursements.

Indian Health Facilities

The Indian Health Facilities program provides for the construction, modernization, and repair of facilities required to provide health services directly to American Indians and Alaska natives, and for the construction of sanitation facilities for Indian homes as authorized by P.L. 86-121, the Indian Sanitation Facilities Act. Since 1970, 14 new or replacement hospitals, 20 health centers, and about 700 units of staff quarters have been constructed under this program. In FY 1985-87, replacement hospitals at Browning, Montana; Crownpoint, New Mexico; and Kanakanak, Alaska, and several health center and staff quarters projects will be completed with funds appropriated in prior years.

In FY 1986, the IHS will conduct a thorough analysis of the facilities construction program that will list existing and planned facilities in order of importance within a comprehensive Area-based facilities plan. The analysis will examine the appropriateness of factors already included in the current facilities planning methodology.

The Indian Health Facilities program is being proposed for transfer to the Indian Health appropriation in FY 1987. The FY 1987 request of $2.5 million will provide for high priority repairs and improvements to existing health care facilities and staff quarters at several locations to protect the Federal investment in Indian Health Facilities. The FY 1987 request does not provide funds for construction of health care facilities given the growing backlog of construction projects either planned or underway and given the large unobligated balances in this account.

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The IHS utilizes the following systems and methodologies in managing its facilities programs:

Real Property Inventory System

An automated inventory of utility mains, parking lots, buildings, land and other real property.

Facilities Condition Survey (Deep Look)

An automated system which maintains a condition evaluation of physical condition, estimated cost of repairs, and life expectancies of all real and installed property.

Preventive Maintenance System

A system of maintaining both building and biomedical equipment. This includes work, planning, procedure manuals, work control, and long range work planning.

The IHS Manual Issuance, Chapter 1-06-00

This issuance is the new IHS facilities management policy which sets forth all IHS policy requirements for operation procedures of the Facilities Management Branch.

Development of the Priority System for Quarters Construction

The DHHS, in concert with the Public Health Service (PHS) and the IHS is developing a system to prioritize the unmet need for quarters at facilities where replacement or modernization of the health facility is not needed. The system should be in place by September 1986.

The Technical Handbook for IHS Facilities Management, Parts 1 and 1.a., Office of Engineering Services Assistance to IHS and For New Construction and Major Modifications

This handbook provides for the technical services as needed for construction projects Architect/Engineer (A/E) design, bidding, contracting, and construction inspection.

Methodology for Determining Future IHS Acute Care Hospital Bed Needs

The methodology is a process for predicting the inpatient health care needs by specific location. The methodology deals primarily with the actual experience of bed utilization for the population to be served, and therefore, provides the most valid and reliable basis for projection of future needs. This methodology was submitted to the Congress by DHHS on May 9, 1979.

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Contractual Requirements for Design and Construction of Health Facilities Under P.L. 93-638

The "Contractual Requirements for Design and Construction of IHS Health Facilities Under P.L. 93-638" document identifies the relative responsibilities of IHS and the tribe, including requirements that the facility be designed and constructed in accordance with the identified requirements and completed within available funds appropriated for that purpose. This document was originally submitted to the Congress by DHHS as an insert to the FY 1980 hearings, and is being updated and revised in FY 1986.

Facility Equipment Program

A generic list of fixed and major movable equipment needs by individual space within a health facility. This list is used as a guide in determining equipment needs for major modernization, new, and replacement health facility projects within the IHS.

Priority System for Health Facility Construction

The DHHS, in concert with the Public Health Service and the IHS, revised the priority system. This system, when applied to the IHS health facilities unmet needs, allows the IHS to rank the facilities in order of priority. It is applied as needed.

DHHS Comprehensive Construction Cost Information System for the IHS

This system projects the design and construction costs of the IHS facility projects using the most up-to-date information available. This system is available to all agencies within the DHHS, including the IHS. This system will be updated and refined in August 1986 to increase its effectiveness.

Health Facility Planning Manual

A standardized systematic process for programming and designing space, staff and equipment for IHS health facilities - a compilation and revision of the planning documents previously being used by DHHS/IHS. This system is currently being used by the IHS and the reviewing agencies of DHHS.

Facility Planning Forecasting Guidelines

In FY 1984, the IHS implemented new facility planning forecasting guidelines. These guidelines are to be used by the IHS Area/Program Offices in developing the various workload forecasts required in the preparation of Program of Requirements (PORs). In the past, there was not a single document that provided comprehensive, standard guidelines for workload forecasting. The new forecasting document satisfies this need, and is intended to assure reliable and valid forecasts, and to achieve consistency among PORs.

IHS Health Facility Design Manual

The IHS has developed a health facility design manual which is the basis for coordinating and streamlining the design process. It explains the roles and responsibilities of each office in the overall process of design

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and construction and serves as a basic informational resource for the contracted A/E in fulfillment of his contract. It provides detailed design criteria and an explanation of the desired technical results for IHS facilities.

As part of the IHS plan for instituting management improvements in FY 1986, all facilities construction and maintenance activities will be placed in a single organizational entity. This will improve the operation and coordination of the various activities.

Sanitation Facilities

The IHS, in cooperation with the tribes and the various Federal Indian housing programs, has continued to construct and/or provide essential water and sanitation facilities for new and renovated housing units constructed on reservations and in Indian and Alaska Native communities. This cooperative Federal effort in water, sewer and housing was coordinated in accordance with an interdepartmental agreement among the Department of Housing and Urban Development (HUD), The Bureau of Indian Affairs (BIA) and IHS, until FY 1982. At that time the Office of Management and Budget (OMB) directed that HUD would provide the funds for sanitation facilities to all HUD-sponsored Indian housing units. Tribal governments and Indian housing authorities continue to be full partners in the planning and implementation of this endeavor and subsequent directives from the Office of Management and Budget (OMB).

With the completion of the sanitation facilities authorized through 1985, approximately 1,300 American Indian and Alaska Native communities and over 24,000 of scattered rural homes will have been provided with water supply and/or sewage disposal systems. In total, these systems will have served over 150,000 Indian and Alaska Native homes. Nearly 60 percent of these homes were new or renovated homes built under Indian housing programs. The provision of improved water supply, sewage disposal facilities and housing has a significant impact on the reduction of infant mortality, gastroenteritis death rates and other environmentally related diseases and injuries.

Over 80 percent of Indian and Alaska Native homes now have sanitation facilities and safe water. Although the FY 1987 budget request contains no funding for the construction of sanitation facilities, the IHS will continue to work with other Federal agencies and tribes to promote sanitation and safe water in Indian communities.

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IHS [illegible] ALLOCATIONS FY 1985
SEPTEMBER 30, 1985
FINAL

ACTING PNT NO ACTIVITY	45 ABERDEEN	53 ALBUQUERQUE	65 ALTOONA	59 ANCHORAGE	46 BEMIDJI	47 BILLINGS	41 CALIFORNIA	54 NAVAJO
HOSP/HLTH CLIN	$31,912,200	$26,514,400	$1,250,000	$72,768,700	$19,436,700	$18,223,500	$20,767,400	$62,844,800
DENTAL	1,933,000	2,455,000	505,000	3,694,000	949,000	1,692,000	335,000	4,132,000
MENTAL HLTH PROG	1,340,000	988,000	741,000	844,000	407,800	970,200	202,000	1,595,000
ALCOHOLISM PROG	2,741,600	1,912,700	6,000	1,445,900	1,794,100	1,857,800	2,918,100	1,923,000
MAINT & REPAIR	636,000	614,000	0	2,586,000	166,000	483,000	0	1,537,000
REIMBURSEMENTS	67,600	277,800	44,100	2,111,900	46,300	232,400	4,000	910,900
TOTAL HLTH DEL	$38,830,400	$32,757,900	$2,546,100	$85,876,500	$22,799,900	$23,459,100	$24,226,500	$72,940,700
CONTRACT CARE	22,098,000	11,240,000	0	19,677,000	9,304,000	18,990,100	574,000	19,242,000
TOTAL CLIN SVC	$60,928,400	$44,001,900	$2,546,100	$102,553,500	$32,103,900	$42,449,200	$24,760,500	$92,182,700
SANITATION	1,989,500	1,070,000	528,000	4,151,000	1,254,500	1,104,000	840,000	3,450,000
PHN	1,591,000	1,086,000	0	637,700	408,500	880,500	134,000	2,477,000
HEALTH ED	388,000	409,900	0	259,000	114,000	353,700	78,700	597,000
CHR	3,183,100	1,573,100	0	1,756,000	1,801,500	2,048,100	871,200	3,072,900
IMMUNIZATION	0	0	0	3,548,400	0	0	0	0
TOTAL PREV HLTH	$7,151,600	$4,119,000	$528,000	$10,352,100	$3,578,500	$4,386,300	$1,923,900	$9,902,900
URBAN	$335,400	$336,400	$0	$0	$1,562,900	$493,000	$2,400,600	$0
IND HLTH MNPWR	$113,500	$38,000	$0	$32,000	$64,500	$71,500	$6,000	$51,900
TRIBAL MGMT	$236,000	$80,000	$0	$383,000	$188,000	$143,000	$295,000	$140,000
DIRECT OPERATIONS	$5,408,000	$4,797,000	$3,475,300	$7,259,000	$1,834,400	$3,952,000	$1,857,300	$4,347,000
TOTAL	$74,073,100	$53,374,300	$6,529,400	$120,559,600	$39,332,100	$51,495,000	$31,243,300	$106,624,500

ACTING PNT NO ACTIVITY	50 OKLAHOMA	40 PHOENIX	44 PORTLAND	42 TUCSON	51 NASHVILLE	94 HQ EAST	TOTAL ALLOCATION	APPROPRIATION	RESERVE
HOSP/HLTH CLIN	$56,058,400	$50,753,200	$13,165,400	$7,400,900	$18,473,200	$22,159,900	$421,753,700	$421,820,000	$66,300
DENTAL	5,116,000	2,579,000	1,578,000	318,000	586,000	305,000	$25,377,000	$25,377,000	$0
MENTAL HLTH PROG	1,257,000	1,121,000	1,087,000	294,000	403,000	0	$11,294,000	$11,294,000	$0
ALCOHOLISM PROG	2,135,100	2,053,200	3,681,000	381,000	1,286,100	325,600	$24,481,900	$24,482,000	$100
MAINT & REPAIR	796,000	1,050,000	146,000	192,000	214,000	0	$8,570,000	$8,570,000	$0
REIMBURSEMENTS	1,137,900	2,019,600	161,200	66,800	27,700	496,700	$7,591,100	$7,600,000	$8,900
TOTAL HLTH DEL	66,520,400	59,391,000	19,818,600	8,652,700	20,990,000	23,287,200	$499,067,200	$499,143,000	$75,800
CONTRACT CARE	17,349,900	14,618,000	19,547,000	4,307,000	6,933,000	0	$163,956,000	$163,956,000	$0
TOTAL CLIN SVC	$83,870,300	$74,009,000	$39,365,600	$13,159,700	$27,923,000	$23,287,200	$663,023,200	$663,099,000	$75,800
SANITATION	2,256,000	2,037,000	1,251,500	358,000	442,000	107,300	$20,645,000	$20,645,000	$0
PHN	1,430,100	1,985,000	600,000	338,000	335,100	0	$12,382,900	$12,383,000	$100
HEALTH ED	404,000	576,700	309,000	20,000	94,000	0	$3,610,000	$3,610,000	$0
CHR	3,942,000	2,804,000	2,087,200	1,035,000	1,297,000	0	$25,467,100	$25,480,000	$12,900
IMMUNIZATION	0	0	77,600	0	0	0	$3,626,000	$3,626,000	$0
TOTAL PREV HLTH	$8,032,100	$7,402,700	$4,321,300	$1,757,000	$2,168,100	$107,300	$65,731,000	$65,744,000	$13,000
URBAN	$1,599,300	$474,700	$1,810,600	$162,200	$282,900	$315,100	$9,793,000	$9,800,000	$7,000
IND HLTH MNPWR	$47,500	$54,800	$65,500	$11,500	$3,000	$5,939,200	$6,499,000	$6,499,000	$0
TRIBAL MGMT	$265,000	$135,000	$200,000	$119,000	$266,000	$0	$2,450,000	$2,450,000	$0
DIRECT OPERATIONS	$5,005,400	$6,423,400	$3,495,700	$2,186,600	$1,878,600	$8,675,300	$60,575,000	$60,575,000	$0
TOTAL	$98,819,600	$88,519,600	$49,258,700	$17,396,000	$32,521,600	$38,324,400	$808,071,200	$808,167,000	$95,800

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INDIAN HEALTH SERVICE
ALLOCATIONS AS Jan 31, 1984
FY 1984

ACTIVITY	05	33	45	51	64	47	81	58
CLINICAL SERVICES								
HOSPITAL & CLINICS	$17,221,300	$12,626,000	$566,000	$41,692,000	$16,795,000	$9,013,700	$16,260,000	$13,365,000
DENTAL	$1,816,000	$1,198,000	$226,000	$1,612,000	$386,000	$770,600	$275,000	$794,000
MENTAL HEALTH	$740,000	$561,000	$452,000	$440,000	$215,000	$448,000	$151,000	$376,000
ALCOHOLISM	$2,660,000	$953,000	$0	$1,415,000	$1,101,000	$1,741,000	$1,333,000	$1,004,000
MAINT & REPAIR	$550,000	$381,000	$0	$867,000	$186,000	$309,000	$0	$73,000
REIMBURSEMENTS	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL HLTH DELIVERY	$22,195,300	$15,579,000	$1,244,000	$46,032,000	$18,517,000	$12,282,700	$18,027,000	$15,284,000
CONTRACT CARE	$10,736,000	$5,668,000	$0	$6,466,000	$4,592,000	$5,396,000	$267,000	$2,439,000
TOTAL CLINICAL SVCS	$32,931,300	$21,247,000	$1,244,000	$52,500,000	$23,109,000	$21,681,700	$18,294,000	$18,725,000
PREVENTIVE HEALTH								
SANITATION	$961,000	$490,000	$245,000	$1,770,000	$650,000	$334,000	$350,000	$251,000
PUBLIC HLTH NURSING	$825,000	$529,000	$0	$200,000	$240,000	$457,000	$83,000	$216,000
HEALTH EDUCATION	$269,000	$201,000	$0	$387,000	$70,000	$219,000	$77,000	$52,000
COMM HLTH REPS	$1,397,000	$593,000	$0	$876,000	$287,000	$1,019,000	$129,000	$445,000
IMMUNIZATION	$0	$0	$0	$825,000	$0	$0	$0	$0
TOTAL PREV HLTH	$3,482,000	$1,813,000	$245,000	$3,868,000	$1,537,000	$2,226,000	$647,000	$1,192,000
URBAN	$553,000	$553,000	$0	$0	$265,000	$81,000	$880,000	$101,000
INDIAN HLTH MANPWR	$0	$0	$0	$0	$0	$0	$0	$0
TRIBAL MGMT	$0	$0	$0	$0	$0	$0	$0	$0
DIRECT OPERATIONS	$2,432,000	$2,230,000	$1,608,000	$3,325,000	$791,000	$1,006,000	$829,000	$895,000
TOTAL	$39,100,300	$25,143,000	$3,097,000	$62,693,000	$26,699,000	$25,798,700	$20,650,000	$20,857,000

ACTIVITY	54	59	66	64	62	94	TOTAL		
							ALLOCATIONS	APPROPRIATION	RESERVE
CLINICAL SERVICES									
HOSPITAL & CLINICS	$30,9[illegible],000	$30,133,700	$23,331,000	$8,233,000	$3,486,000	$10,414,000	$231,022,700	$222,[illegible],000	$191,193,300
DENTAL	$1,925,000	$2,445,000	$1,039,000	$718,000	$142,000	$525,000	$12,210,000	$25,620,000	$12,410,000
MENTAL HEALTH	$705,000	$795,000	$5[illegible],000	$[illegible],000	$197,000	$0	$6,347,000	$11,334,000	$4,987,000
ALCOHOLISM	$1,9[illegible],000	$2,105,000	$1,28[illegible],000	$3,619,000	$562,000	$0	$19,3[illegible],000	$24,781,000	$4,814,[illegible]
MAINT & REPAIR	$519,000	$269,000	$342,000	$98[illegible]	$104,000	$0	$3,612,000	$8,532,000	$4,920,000
REIMBURSEMENTS	$0	$0	$0	$0	$0	$75,000	$75,000	$[illegible],000	$4,529,000
TOTAL HLTH DELIVERY	$35,[illegible],000	$35,749,700	$26,535,000	$[illegible],000	$4,290,000	$10,[illegible],000	$273,877,700	$[illegible],000	$227,848,300
CONTRACT CARE	$9,[illegible],000	$8,[illegible],000	$7,[illegible],000	$[illegible],000	$2,282,000	$0	$77,157,000	$[illegible],000	$88,709,000
TOTAL CLINICAL SVCS	$45,[illegible],000	$44,[illegible],700	$33,[illegible],000	$[illegible],000	$6,[illegible],000	$10,[illegible],000	$349,[illegible],700	$[illegible],000	$316,557,300
PREVENTIVE HEALTH									
SANITATION	$1,562,000	$1,[illegible],000	$957,000	$[illegible],000	$[illegible],000	$42,000	$9,700,000	$[illegible],000	$10,[illegible],000
PUBLIC HLTH NURSING	$1,[illegible],000	$[illegible],[illegible]	$[illegible],000	$[illegible],000	$[illegible],000	$0	$[illegible],000	$12,317,000	$2,736,000
HEALTH EDUCATION	$[illegible],000	$[illegible],000	$[illegible],000	$[illegible],000	$[illegible],000	$0	$[illegible],000	$3,576,000	$1,533,000
COMM HLTH REPS	$[illegible],000	$[illegible],[illegible],000	$[illegible],000	$[illegible],000	$[illegible],000	$0	$[illegible],000	$14,[illegible],000	$2,[illegible],000
IMMUNIZATION	$0	$0	$0	$[illegible],000	$0	$0	$[illegible],000	$2,[illegible],000	$1,[illegible],000
TOTAL PREV HLTH	$[illegible],[illegible],000	$[illegible],[illegible],000	$[illegible],[illegible],000	$[illegible],[illegible],000	$[illegible],000	$[illegible],000	$[illegible],000	$[illegible],000	$[illegible],000
URBAN	$[illegible],000	$[illegible],000	$[illegible],000	$[illegible],000	$[illegible],000	$[illegible],000	$[illegible],000	$[illegible],000	$[illegible],000
INDIAN HLTH MANPWR	$0	$0	$0	$0	$0	$[illegible],000	$[illegible],000	$[illegible],000	$[illegible],[illegible]
TRIBAL MGMT	$0	$0	$0	$0	$0	$0	$[illegible],000	$500,000	
DIRECT OPERATIONS	$1,991,000	$[illegible],[illegible],000	$[illegible],637,000	$1,[illegible],000	$1,[illegible],000	$[illegible],[illegible],000	$27,[illegible],000	$[illegible],[illegible],000	$[illegible],[illegible],000
TOTAL	$51,[illegible],000	$51,[illegible],700	$39,[illegible],000	$[illegible],[illegible],000	$[illegible],[illegible],000	$[illegible],[illegible],000	$[illegible],[illegible],000	$[illegible],[illegible],000	$[illegible],[illegible],[illegible]

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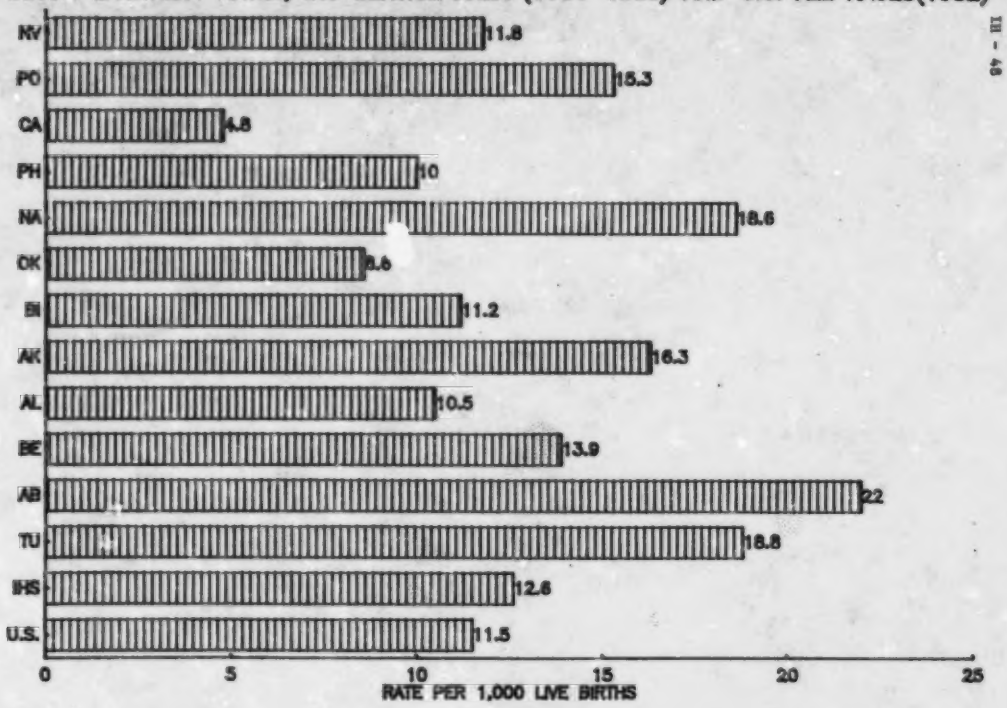

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FY 1986

INDIAN HEALTH SERVICE
LEASE APPROVALS REQUESTED

The Administrative Provisions for the Indian Health Service Appropriation requires the IHS to have an Appropriation Act provision for the initial lease of permanent structures prior to using appropriated funds for this purpose. A DHHS request is currently pending before the Appropriations Committee for the approval of IHS' leasing the following structures, which were not included or anticipated during the development of the FY 1986 budget. Funds are available in the FY 1986 appropriation to cover the additional cost for the leased space.

	LOCATIONS	COSTS
1.	Miami, Oklahoma 1500 sf administrative support (office) & storage	$22,500
2.	Portland, Oregon 2000 sf storage	$21,200
3.	Show Low, Arizona 670 sf office, 120 sf special purpose, 1200 sf parking	$ 3,720
4.	Redding, California 258 sf office, 100 sf special purpose, 250 sf storage, 300 sf parking	$ 6,655
5.	Ukiah, Californi 375 sf office, 200 sf storage, 600 sf parking	$ 5,078
6.	Pierre, South Dakota 155 sf office, 200 sf storage	$ 2,343
	Total 7,298 square feet	$61,496

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1. Clinical Services

(a) IHS and Tribal Health Delivery

	FY 1986 Appropriation		FY 1986 Available after Sequestering		FY 1986 Revised Estimate		FY 1987 Estimate		Increase (+) Decrease (-)	
	FTEs	BA	FTEs	BA	FTEs	BA	FTEs	BA	FTEs	BA
Direct Approp.	8,503	$504,174,000	8,297	$498,877,000	8,160	$492,086,000	7,810	$481,993,000	-350	-$10,093,000
Reimburse.	464	51,615,000*	448	51,329,000*1/	448	51,329,000*1/	448	76,615,000	--	+ 25,286,000
Total	8,967	$555,789,000	8,745	$550,206,000	8,608	$543,415,000	8,258	$558,608,000	-350	+$15,193,000

Funded from Direct Appropriation

	1986 Base FTEs	1986 Base BA	Change from Base FTEs	Change from Base BA
Increases:				
Built-in:				
1. Increase in FICA Payments	--	$ N/A	--	$ +7,000
2. Within Grade Promotions	--	N/A	--	+565,000
3. Increased Cost of Medical and Other Supplies	--	2,547,000	--	+181,000
4. Increased Cost of Health Care Provided under Contracts or Grants	--	30,569,000	--	+2,587,000
5. Increased Cost of Rents, Communications, and Utilities	--	54,000	--	+2,000
6. Increased Cost of Travel and Transportation of Things	--	1,407,000	--	+74,000
7. Increased Cost of Maintenance and Repair	--	8,621,000	--	+490,000
8. Increased Cost of Medical and Other Equipment	--	302,000	--	+13,000
Subtotal				+$3,919,000
Decreases:				
Program:				
1. Hospital and Health Clinic	7,716	$422,216,000	-292	-$12,602,000
2. Dental Services	640	25,620,000	-44	-1,007,000
3. Mental Health	192	11,334,000	-14	-403,000
Subtotal			-350	-$14,012,000
Net Change			-350	-$10,093,000

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Funded From Reimbursements	1986 Base FTEs	1986 Base BA	Change from Base FTEs	Change from Base BA
Increases:				
Built-In (Funded from Additional Collections of Medicare/Medicaid Reimb)				
1. Increase in FICA Payments	--	N/A	--	$ +54,000
2. Within Grade Promotions	--	N/A	--	+3,216,000
3. Increased Payments to HRSA Service and Supply Fund, Federal Communication System, and Bureau of Employee Compensation	--	11,994,000	--	+1,756,000
4. Increased Cost of Standard Level User Charges (SLUC)	--	5,187,000	--	+218,000
5. Increased Cost of Medical and Other Supplies	--	39,839,000	--	+2,209,000
6. Increased Cost of Health Care Provided Under Contracts or Grants	--	117,259,000	--	+7,036,000
7. Increased Cost of Rents, Communications, and Utilities	--	10,348,000	--	+435,000
8. Increased Cost of Travel and Transportation of Things	--	11,831,000	--	+497,000
9. Increased Cost of Medical and Other Equipment	--	1,507,000	--	+63,000
10. Increased Cost of Printing	--	1,533,000	--	+64,000
Program (Funded from Additional Collection of Medicare/Medicaid and Private Insurers Reimbursements):				
1. Proposed Collection of Additional Reimbursements to Partially Fund the Program Decrease in Hospitals and Health Clinics Activity	--	---	+275	$ +9,692,000 2/
2. Reimbursements Collected from Non-Federal Sources (Regular Reimbursements)	--	---	--	+16,000 3/
3. Reimbursements Collected for Operation and Maintenance of Quarters.	--	---	--	+30,000 3/
Subtotal	--	---	+275	+$25,286,000
Net Change			-75	+$15,193,000

1/ Reflects the sequester of reimbursements of $30,000 for operation and maintenance of quarters (75X5071), $16,000 in reimbursements collected from non-federal sources, and $240,000 from Medicaid reimbursements pursuant to the Balanced Budget and Emergency Deficit Control Act of 1985, P.L. 99-177.

2/ Includes $8,000,000 from private insurers, the effect in 1987 of funds sequestered in 1986 from Medicaid collections of $240,000, and additional collections of Medicare/Medicaid reimbursements of $1,452,000.

3/ Increase reflects the effect in 1987 of funds sequestered in 1986.

* Excludes the Medicare/Medicaid reimbursements unobligated balance start of year (1986) of $13,131,256 and $709,124 unobligated balance from operation and maintenance of quarters.

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Hospital and Health Clinic Program

	FY 1986 Appropriation		FY 1986 Available after Sequestering		FY 1986 Revised Estimate		FY 1987 Estimate		Increase (+) Decrease (-)	
	FTEs	BA	FTEs	BA	FTEs	BA	FTEs	BA	FTEs	BA
Direct Approp.	7,654	$433,598,000	7,465	$419,807,000	7,328	$422,216,000	7,036	$409,614,000	-292	-$12,602,000
Reimburse.	464	48,615,000*	448	48,359,000*1/	448	48,359,000*1/	448	73,615,000	--	+ 25,256,000
Total	8,118	$482,213,000	7,913	$477,366,000	7,776	$470,575,000	7,484	$483,229,000	-292	+$12,654,000

Funded From
Direct Appropriation:

	1986 Base		Change from Base	
	FTEs	BA	FTEs	BA
Decrease:				
Program:				
Hospital and Health Clinic	7,328	422,216,000	-292	-$12,602,000
Funded from Reimbursements:				
Increases:				
Built-in (Funded from Additional Collections of Medicare/Medicaid Reimb)				
1. Increase in FICA Payments	--	N/A	--	$ +54,000
2. Within Grade Promotions	--	N/A	--	+3,216,000
3. Increased Payments to HHSA Service and Supply Fund, Federal Communication System, and Bureau of Employee Compensation	--	11,994,000	--	+1,734,000
4. Increased Cost of Standard Level User Charges (SLUC)	--	5,187,000	--	+218,000
5. Increased Cost of Medical and Other Supplies	--	39,839,000	--	+2,209,000
6. Increased Cost of Health Care Provided Under Cont acts or Grants	--	117,259,000	--	+7,036,000
7. Increased Cost of Rents, Communications, and Utilities	--	10,348,000	--	+435,000
8. Increased Cost of Travel and Transportation of Things	--	11,831,000	--	+497,000
9. Increased Cost of Medical and Other Equipment	--	1,507,000	--	+63,000
10. Increased Cost of Printing	--	1,533,000	--	+64,000
Program (Funded from Additional Collection of Medicare/Medicaid and Private Insurance Reimbursements):				
1. Proposed Collection of Additional Reimbursements to Partially Fund Program Decrease in Hospitals & Health Clinics Activity	--	---	+275	$ +9,492,000 2/
2. Reimbursements Collected from Non-Federal Sources (Regular Reimbursements)	--	---	--	+16,000 3/
Subtotal			+275	+$25,256,000
Net Change			-17	+$12,654,000

* Excludes the unobligated balance start of year (1986) of $13,131,256 for Medicare/Medicaid reimbursements and $709,124 for operations and maintenance of quarters.

1/ Reflects sequester of $16,000 in reimbursements collected from non-Federal sources and $240,000 from medicaid reimbursements pursuant to the Balanced Budget and Emergency Deficit Control Act of 1985, P.L. 99-177.

2/ Includes $8,000,000 from private insurers, the effect in 1987 of funds sequestered in 1986 from Medicaid collections of $240,000, and additional collections of Medicare/Medicaid reimbursements of $1,452,000.

3/ Increase reflects the effect in 1987 of funds sequestered in 1986 from non-Federal sources (Regular reimbursements).

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Purpose and Method of Operation

The hospital and health clinics budget activity, a major component of the IHS and tribal health delivery system, is the primary source of funds for the delivery of clinical health care to the Indian people. In achieving the goal of raising the health status of Indian people to the highest possible level, the IHS places greatest emphasis upon the provision of comprehensive preventive and curative services with emphasis on community aspects of ill-health. Within this general concept of community oriented primary care, emphasis is placed upon maintaining basic inpatient and ambulatory patient care services to Indian people living on or near traditional Indian lands. The hospital and health clinics activity includes inpatient care, ambulatory patient care, eye care, emergency medical services, laboratory services, model diabetes and radiology services. Included in this activity are health programs operated and managed by both the IHS and the tribes. The IHS health delivery system includes 45 hospitals, 71 health centers, and several hundred smaller health stations and satellite clinics, whereas the tribal health delivery system, through contracts with the IHS, consists of 6 hospitals and approximately 250 health clinics. The IHS continues to emphasize the implementation of the Indian Self-Determination and Education Assistance Act, Public Law 93-638, by assisting tribes and tribal organizations in the assumption of the operation and management of hospital and health clinics activities.

The provision of and maintenance of high quality clinical health care continues to be a high priority of the hospital and health clinics activity. The standards set by the Joint Commission on Accreditation of Hospitals (JCAH) and the Medicare standards established by the Health Care Financing Administration (HCFA) are utilized as the measure of the quality of clinical health care provided through the IHS and tribally operated health facilities.

Currently, 37 of the 45 hospitals operated by the IHS and 6 hospitals operated by the tribes are accredited by the JCAH, an increase of 74 percent during the past decade. In addition, 34 IHS health centers are accredited by the JCAH. All of the IHS hospitals are certified by the HCFA as Medicare providers and all free standing health centers are certified for participation in the Medicaid program.

Inpatient services range from limited inpatient care with no specialty care, in the smaller hospitals, to a full range of inpatient services including specialty care in the larger hospitals and medical centers. The leading causes of hospitalization for general, medical and surgical patients are: complications of pregnancy, childbirth, and puerperium; injuries and poisonings; digestive system diseases; and respiratory system diseases.

In addition to the inpatient care program, IHS and tribally operated hospitals provide a comprehensive range of outpatient health services. The outpatient care program encompasses 45 hospital outpatient departments, 71 health centers and several hundred smaller health stations and satellite clinics operated by the IHS, and six hospital outpatient departments and approximately 250 health clinics operated by the tribes. The outpatient care program is the entry point to the IHS comprehensive health care delivery system, and includes primary medical care, preventive and rehabilitative health services. The patients requiring more definitive or extensive care are referred to the IHS or contract hospitals. The post-hospitalization or follow-up care is provided through the outpatient care program and the community health representative program.

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The preventive health component of the outpatient care program includes prenatal care, maternal and child health services, well-child clinics, family planning, care of high risk mothers and infants, school health, and the immunization program. In FY 1984, the immunization level was 90 percent for the target population. The outpatient care program also includes the prevention and control of communicable disease (including tuberculosis, venereal diseases, and trachoma) and early detection and treatment of chronic conditions such as diabetes, arthritis, otitis media, orthopedic conditions and heart diseases.

In addition to the patient care services provided through the IHS and tribally operated health facilities, the IHS purchases medical care services from non-IHS providers. These contract health services, considered to be an integral part of the comprehensive primary care system, are used to supplement and complement other available health care resources. The contract health care system includes specialty care which is not available in IHS facilities or primary and secondary care in those locations where the IHS does not have a facility. The IHS has approximately 1,300 contracts with private providers (primarily for the delivery of specialty care).

The equitable distribution of resources for health services continues to be a priority of the IHS. In addition to the implementation of the equity health care fund during FY 1981 - 1984, the IHS has taken steps to further improve and refine the resource distribution process. This entailed the development of a resource allocation formula which would more equitably distribute clinical services resources. In FY 1984, this formula was used to distribute $41.8 million of program increases (hospital and health clinics, contract health service and tribal support funds) to the Area/Program Offices. This formula will be continually analyzed and refined to insure the continuation of an equitable distribution of resources. In FY 1985, the IHS made available an additional $5 million for this activity and in FY 1986 after further refinements in the techniques used, the IHS will distribute an additional amount to address unfair inequity.

Accomplishments

During FY 1985, the IHS experienced a slight increase in inpatient admissions and outpatient visits as compared to FY 1984. There were 78,423 admissions to IHS hospitals in FY 1985, an increase of 1.2 percent (901 admissions) from the 1984 level. During FY 1985, there were 3,389,618 outpatient visits to the facilities, an increase of 4.2 percent (140,958 outpatient visits) from the FY 1984 level.

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FY 1987 Budget Proposal

Funded from Direct Appropriation

Program Decrease -$12,602,000/-292 FTEs

The FY 1987 budget reflects a reduction of $12,602,000 and 292 FTEs in the Hospital and Health Clinic activity. The program decrease will be partially reduced by $9,692,000 and 275 FTEs through the use of the additional collection of medicare/medicaid and private insurers reimbursements. The remaining program decrease of $2,910,000 and 17 FTEs will affect the services provided both in direct and tribally operated facilities. Using IHS productivity norms, the reduction in service expected will affect the inpatient and outpatient services. Other revisions including the proposed changes in eligibility criteria and a more refined definition of the core services provided by IHS may influence the impact of this reduction. Included in the program decrease are reductions in travel and transportation of things, supplies, equipment, telecommunications, and an overall reduction in contracted services related to the provision of medical care.

Funded from Reimbursements

Built-In Increase +$15,548,000 (Funded from Additional Collection of Medicare/Medicaid Reimbursements)

The FY 1987 request includes an increase of $15,548,000 to fund built-in cost increases from the increased collection of reimbursements. Included in this increase is $54,000 for the increase in FICA payments; $3,216,000 to fund within grade promotions in accordance with section 5335 of Title 5, U.S.C.; $7,036,000 to fund the increased cost of providing health care through the contracts or grants mechanisms; $1,756,000 for increased payments to HRSA Service and Supply Fund, Federal Communication System, and Bureau of Employee Compensation; $3,486,000 to fund inflationary costs associated with program operations in such areas as purchasing supplies, materials, and equipment used in the provision of health care services; increased cost of rents, communications; and program travel and transportation of things.

Program Increase +$9,708,000 (Funded from Additional Collection of Medicare/Medicaid and Private Insurers Reimbursements)

The FY 1987 request includes the proposal to partially fund $9,692,000 of the program decrease of $12,602,000 from increased collections of medicare/medicaid and private insurers reimbursements. This effect will result in a net program decrease of $2,910,000. Also included is $16,000 to reflect the effect in 1987 of funds sequestered in 1986 for the collection of regular reimbursements from other non-Federal sources.

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Impact Data

The workloads for the IHS operated hospitals and clinics are reflected in the following table:

Workload	1985 Actual	1986 Revised 1/	1987* Estimate
Average Daily Patient Census (excluding newborns)	1,052	990	970
Hospital Admissions (excluding newborns)	78,423	76,200	76,000
Average Length of Stay (days)	4.9	4.8	4.7
Births	12,645	12,700	13,000
Outpatient Visits (all clinics)	3,389,618	3,342,000	3,500,000

*Effect of proposed $2.9 million reduction is included in this projection.

1/ Based on past trends.

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Dental Services

	FY 1986 Appropriation		FY 1986 Available after Sequestering		FY 1986 Revised Estimate		FY 1987 Estimate		Increase (+) Decrease (-)	
	FTEs	BA	FTEs	BA	FTEs	BA	FTEs	BA	FTEs	BA
Direct Appropriation..	648	$25,879,000	640	$25,620,000	640	$25,620,000	596	$25,692,000	-44	+$72,000
Reimbursements..	--	---	--	---	--	---	--	---	--	---
Total	648	$25,879,000	640	$25,620,000	640	$25,620,000	596	$25,692,000	-44	+$72,000

Funded From
Direct Appropriation

	1986 Base		Change from Base	
	FTEs	BA	FTEs	BA
Increases:				
Built-In:				
1. Increase in FICA Payments	--	$ N/A	--	$ +6,000
2. Within Grade Promotions	--	N/A	--	+452,000
3. Increased Cost of Medical and Other Supplies	--	2,072,000	--	+148,000
4. Increased Cost of Health Care Provided Under Contracts or Grants	--	3,093,000	--	+411,000
5. Increased Cost of Rent, Communications, and Utilities	--	54,000	--	+2,000
6. Increased Cost of Travel and Transportation of Things	--	916,000	--	+47,000
7. Increased Cost of Medical and Other Equipment	--	302,000	--	+13,000
Decrease:				
Program:				
Dental Services	640	$25,620,000	-44	-$1,007,000
Net Change			-44	+$ 72,000

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Purpose and Method of Operation

The major goal of the IHS Dental program is to raise the level of oral health among American Indians and Alaska Natives (AI/AN) to the highest possible level. The most prevalent oral disease, tooth decay and diseases of the supporting structures of the teeth, are both chronic and progressive and, if left untreated lead ultimately to tooth loss and associated oral problems: pain, impaired function, time lost from work or school as well as concomitant physiological and psychological handicaps associated with appearance and speech.

The prevalence of oral disease is greater among AI/AN than in the general population. Data from the IHS 1983-84 Oral Health Survey indicate:

- Only 20% of Indian children are free from tooth decay vs. 37% nationally and 30% have 7 or more teeth affected by decay vs. 15% nationally.
- Dental decay experience in permanent teeth of 5-17 year olds is 2 times the national average.
- Only 53% of decayed permanent teeth are filled vs. 79% nationally.
- 50% of Indian pre-school children have baby bottle tooth decay.
- 70% of Indian children require restorations vs. 25% nationally.
- Access to dental care (30%) is lower than the national average (50%).

IHS and tribal dental programs strive to achieve a balance between immediate clinical treatment and community health promotion/disease prevention efforts that will improve oral health by decreasing treatment requirements. Clinical treatment emphasizes those services which prevent or control disease and thereby preserve the dentition. The dental and environmental health programs have continued to emphasize water floridation as the most effective means of preventing tooth decay. Steady progress has been made over the past four years with over 50% of systems with fluoridation equipment providing optimally fluoridated water. Other preventive efforts such as fluoride mouthrinsing and placement of tooth sealants are now widely accepted and utilized. Guidelines for the conduct of fluoride mouthrinsing programs in Bureau of Indian Affairs (BIA) schools were developed in FY 1985 and a pilot school fluoridation project initiated at the BIA school in Tohatchi, New Mexico. Although the development, implementation and monitoring of such programs may result in a slight decline in the clinical services provided, the IHS believes that a continuing emphasis on disease prevention is essential to long term improvement in the oral health of AI/AN.

Accomplishments

In light of the higher levels of disease among AI/AN and their lower access to dental care, the Dental Program has increased its efforts to extend preventive services to both users and non-users of clinical dental services. The following initiatives undertaken or continued in FY 1985 reflect our ongoing commitment to improved oral health through health promotion and disease prevention.

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- access to fluoridated water has increased dramatically and consistently since FY 1981. In FY 1985 the percent of active fluoridation systems delivering minimum or greater levels of fluoride increased to 70% compared to 64% in FY 1984 and 46% in FY 1982. A school water fluoridation pilot test was initiated in conjunction with the BIA, and it is anticipated that this effort will be extended to other BIA schools in the future.

- in areas wherein water fluoridation is impractical or only recently initiated, programs of supplemental fluorides are prescribed for caries-susceptible children. In FY 1985 the number of children covered by fluoride mouthrinsing programs increased by approximately 25% over FY 1984.

- oral health educational initiatives have been strengthened in order to foster the development of self-help habits that will lead to improved oral health. Children in Headstart programs and their families are a primary target. Under an interagency agreement with the Administration for Children, Youth and Families (ACYF), the IHS Dental Program in FY 1985 provided training and technical assistance to 60% of Headstart grantees serving American Indian children and their families. Under this same agreement, a special initiative to reduce the high prevalence of baby bottle tooth decay among Indian children was begun in FY 1985 and will continue through 1990. During FY 1985 directors of the IHS Diabetes and Dental programs met with representatives of the National Institute of Dental Research to discuss the development of educational materials for primary care providers that would clearly illustrate the relationship between diabetes and periodontal (gum) disease. These materials are expected to be available in late FY 1986 and should be of assistance to both physicians and dentists in the early diagnosis and treatment of periodontal disease.

  A relatively new clinical service, adhesive pit and fissure sealants, have been widely adopted by IHS and tribal dentists in the past two years. The use of sealants to prevent decay in the pits and grooves of the teeth has increased dramatically in the past two years after a special initiative was begun in FY 1983-84. In FY 1985 nearly 60,000 quadrants of this service were provided compared to only 15,000 in FY 1984 and 4,500 in FY 1983.

- data from the 1983-84 IHS Oral Health Survey were collated and analyzed. These data assist in the monitoring of oral health status and allow the identification of areas with need for special initiatives or additional resources. They are now being incorporated into a needs/performance based resource allocation model to be implemented in FY 1986. FY 1985 also marked the beginning of a transition period from batch to interactive data processing. Although this effort will not fully flower until the IHS Resource Patient Management System is operational, the dental program has begun some limited efforts to restructure its data base to facilitate program monitoring and evaluation.

- the IHS Oral Health Program Guide, a compendium of essential information on community preventive dentistry, quality assurance, services delivery and a wide variety of other pertinent topics was published in FY 1985. This combination of new and updated material is used for the orientation of new staff and the continuing education of IHS personnel and the communities they serve.

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FY 1987 Budget Proposal

Funded from Direct Appropriation

Built-In Increase +$1,079,000

The FY 1987 request includes an increase of $1,079,000 to fund built-in cost increases. Included in this increase is $6,000 for the increase in FICA payments; $452,000 to fund within grade promotions in accordance with Section 5335 of Title 5, U.S.C.; $411,000 for the increased cost of providing health care through the contracts or grants mechanisms which support the provision of dental care by tribal organizations; and $210,000 to fund inflationary costs associated with program operations in such areas as purchasing supplies, materials, and equipment used in the provision of dental services; increased cost of rents, communications, and utilities; and program travel and transportation of things.

Program Decrease -$1,007,000/-44 FTEs

Included in the program decrease is a $55,000 reduction which will be achieved through improved management by decreasing travel, telecommunication and consultant costs, restricting supply purchases and delaying the replacement of some equipment items. The remaining reduction of $952,000 will be obtained by decreasing staffing levels by 44 FTEs with a resultant loss of 86,000 clinical services to 11,000 patients.

Impact Data

	1985 Actual*	1986 Revised	1987 Estimate
Persons Treated			
Total Number Treated.....	253,468	258,000	238,000
Treated Directly.....	218,385	214,000	203,000
By IHS Staff.....	173,553	170,000	162,000
By Tribal Staff.....	44,832	44,000	41,000
Treated by Contract.....	35,083	44,000	35,000
By IHS Contract.....	29,575	37,000	30,000
By Tribal Contract.....	5,508	7,000	5,000
Services Provided			
al Services Provided.....	1,868,056	1,904,000	1,752,000
Total Direct Services.....	1,615,966	1,587,000	1,501,000
By IHS Staff.....	1,276,623	1,254,000	1,186,000
By Tribal Staff.....	339,343	333,000	315,000
Total Contract Services.....	252,090	317,000	251,000
By IHS Contract.....	210,508	266,000	211,000
By Tribal Contract.....	41,582	51,000	40,000

*Does not include 5,395 persons treated and 46,764 services provided by Urban Indian health programs.

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Purpose and Method of Operation

The significant progress made over the past few years in reducing the morbidity and mortality rates of many of the physical health problems affecting Indian populations has not been reflected in mental health problems. Problems of alcohol misuse, depression and anxiety frequently underlie and complicate physical disorders, including traumatic incidents, and require a considerable amount of attention from all care givers.

Funds from the hospitals and health clinics budget activity are also utilized to address mental health problems. It is estimated that mental health problems are associated with more than one third of the demands made on the health facilities for services.

The IHS Mental Health program is a community oriented clinical service responding primarily to reservation populations with the following major objectives:

1) To provide the highest possible level and quality of mental health services.

2) To facilitate increased access to a full range of mental health services.

3) To assist Tribes and Native Corporations to develop, staff, and manage their own mental health program efforts to whatever extent they desire.

4) To work with Indian communities to design, implement, and evaluate mental health programming efforts.

5) To work with other IHS clinical services to assure that both the health and mental health needs of the patients are addressed in an integrated fashion.

6) To support the Indian Children's Program effort as an interagency IHS-BIA/Office of Indian Education Programs (OIEP) project which services emotionally, educationally, physically, and mentally handicapped American Indian children and youth. Program activities include consultation, training, and technical assistance in response to national requests with the preponderance of direct service responses being regionally focused.

7) To develop and implement plans and standards for quality care, third party reimbursements, P.L. 93-638 program contracting, training, research, and continuing education requirements for staff.

8) Encourage respect for, and sensitivity to, the cultural belief systems and traditional practices as they relate to the mental health of individuals, families, and communities, and to help sensitize persons who work with Indian people to the importance and impact that these unique cultural systems have on life style and behavior.

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Mental Health

	FY 1986 Appropriation		FY 1986 Available after Sequestering		FY 1986 Revised Estimate		FY 1987 Estimate		Increase (+) Decrease (-)	
	FTEs	BA	FTEs	BA	FTEs	BA	FTEs	BA	FTEs	BA
Direct Appropriation..	201	$11,449,000	192	$11,334,000	192	$11,334,000	178	$11,399,000	-14	+$65,000
Reimbursements..	--	---	--	---	--	---	--	---	--	---
Total	201	$11,449,000	192	$11,334,000	192	$11,334,000	178	$11,399,000	-14	+$65,000

Funded From
Direct Appropriation

	1986 Base		Change from Base	
	FTEs	BA	FTEs	BA
Increases:				
Built-In:				
1. Increase in FICA Payments	--	$ N/A	--	$ +1,000
2. Within Grade Promotions	--	N/A	--	+113,000
3. Increased Cost of Medical and Other Supplies	--	475,000	--	+33,000
4. Increased Cost of Health Care Provided Under Contracts or Grants	--	2,700,000	--	+294,000
5. Increased Cost of Travel and Transportation of Things	--	491,000	--	+27,000
Decrease:				
Program:				
Mental Health	192	$11,334,000	-14	-$403,000
Net Change			-14	+$ 65,000

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Accomplishments

During FY 1985, the Mental Health program provided 180,000 client contacts, an increase of approximately 16% over FY 1983, 58,000 outpatient visits, an increase of approximately 2% over FY 1983, and 16,200 inpatient days of care, an increase of approximately 43% over FY 1983.

FY 1987 Budget Proposal

With IHS funding resources that are proposed for FY 1987, the IHS will continue to provide quality mental health care.

Funded from Direct Appropriation

Built-In Increase +$468,000

The FY 1987 request includes an increase of $468,000 to fund built-in cost increases. Included in this increase is $1,000 for the increase in FICA payments; $113,000 to fund within grade promotions in accordance with Section 5335 of Title 5, U.S.C.; $294,000 to fund the increased cost of providing health care through the contracts or grants mechanism which includes increased costs for vendor personnel which supports the contracts and grants to provide the interagency agreement among IHS, the Bureau of Indian Affairs, and tribal outpatient mental health programs; and $60,000 to fund inflationary costs associated with program operations in such areas as purchasing supplies and materials used in the provision of mental health services, program travel, and transportation of things.

Program Decrease -$403,000/-14 FTEs

The proposed decrease of $403,000 and 14 FTEs will result in a reduction of 17,000 patient contacts. Included in the program decrease are reductions achieved through improved management by decreasing travel, supplies and equipment.

Impact Data

	1985 Actual	1986 Revised	1987 Estimate
Client Contacts.....	180,000	180,000	163,000

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Alcoholism

	FY 1986 Appropriation BA	FY 1986 Available after Sequestering BA	FY 1986 Revised Estimate BA	FY 1987 Estimate BA	Increase (+) Decrease (-) BA
Direct Appropriation.	$24,627,000	$24,381,000	$24,381,000	$26,263,000	+$1,882,000
Reimbursements.	---	---	---	---	---
Total	$24,627,000	$24,381,000	$24,381,000	$26,263,000	+$1,882,000

Funded From
Direct Appropriation

	1986 Base	Change from Base
Increase:		
Built-in:		
1. Increased Cost of Health Care Provided under Contracts or Grants.....	$24,381,000	+$1,882,000

Purpose and Method of Operation

Alcoholism and alcohol abuse continue to be leading causes of health problems among Native Americans. It is widely held that 95% of American Indians and Alaska Natives are affected either directly or indirectly by a family member's abuse of alcohol. This is confirmed by data obtained by IHS from the National Center for Health Statistics, DHHS, which shows that four of the top ten causes of death among Indian people may be directly related to alcohol abuse. The four causes are accidents, cirrhosis of the liver, suicide, and homicide. Finally, according to information disseminated by the National Clearinghouse on Alcohol Information, American Indians have the highest reported frequency of problems associated with drinking when considered with other special groups. Alcoholism has been responsible for the social disorganization that has resulted in broken homes, violence, arrests, auto accidents, unemployment, and wasting of human lives and human potential. In addition to social devastation, alcoholism causes or contributes to an array of physical disabilities that must be treated by IHS and which drain medical care resources that are needed to address other health problems.

Title II of Public Law 94-437 authorized the transfer of Indian alcoholism programs from the administrative jurisdiction of the National Institute of Alcohol Abuse and Alcoholism (NIAAA) to the IHS. To date all Indian alcoholism programs funded by the NIAAA (180) have been transferred to the IHS. The transition was completed at the beginning of FY 1983. Presently, the IHS is funding 235 American Indian/Alaska Native alcoholism programs to Indian reservations and urban communities.

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Accomplishments

The accomplishments of the Alcoholism program can be summarized as follows:

A Management Information system was designed to streamline the current Alcoholism Treatment Guidance System (Data Collection System).

In FY 1982 and FY 1983 the IHS evaluated the Alcoholism programs providing treatment and prevention of alcoholism using standards that included effectiveness indicators and case management procedures, contract compliance, and assessed the relative efficiency and effectiveness of these programs. Focus was on the process used by the programs. In FY 1984, the evaluation process was changed to focus on direct services to clients and treatment outcome measures. Specifically evaluated were: (1) appropriateness of services; (2) adequacy of direct service to clients; (3) program operating procedures; (4) program performance; and (5) outpatient components. Plans are being developed to do a follow-up evaluation in FY 1986-1987 to monitor program progress in the five areas evaluated in FY 1984.

The Fetal Alcohol Syndrome (FAS) prevention training project conducted training at 68 sites (Service Units) with a total of 1,451 participants trained. Using the training of trainers concept the 1,451 individuals will provide FAS prevention training within their individual communities.

The development of a primary care alcoholism training package for clinicians was completed. The Clinical Support Center, Office of Continuing Education in Phoenix, Arizona will have the responsibility for implementation of this project which will help fill a serious gap in the usual educational experiences of health professionals.

In FY 1985, the IHS completed an Alcohol Program Review at all levels of operations, i.e., headquarters, area, service unit and tribal. The Alcohol Program Review focused on ten management functions which included research, training, planning, resource management, evaluation, program policy statements, standards setting, operations, monitoring, and coordination. The IHS Alcohol Program Branch will address all recommendations made in the FY 1985 Alcohol Program Review and develop a action plan for implementation in FY 1986.

FY 1987 Budget Proposal

Funded from Direct Appropriation

Built-In Increase +$1,882,000

The FY 1987 request includes an increase of $1,882,000 to fund the increased cost of providing health care through the contracts or grants mechanism. The resources requested will enable the IHS to continue all 235 programs.

Impact Data

Services Provided	1985 Actual	1986 Revised	1987 Estimate
Outpatient Visits.....	338,712	339,000	339,000
Inpatient Days.....	206,423	206,000	206,000

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Maintenance and Repair

	FY 1986 Appropriation	FY 1986 Available after Sequestering	FY 1986 Revised Estimate	FY 1987 Estimate	Increase (+) Decrease (-)
	BA	BA	BA	BA	BA
Direct Appropriation.	$ 8,621,000	$ 8,535,000	$ 8,535,000	$ 9,025,000	+$490,000
Reimbursements.	3,000,000*	2,970,000*	2,970,000*	3,000,000	+30,000
Total	$11,621,000	$11,505,000 1/	$11,505,000 1/	$12,025,000	+$520,000

Funded From
Direct Appropriation

	1986 Base	Change from Base
Increase:		
Built-in:		
Increased Cost of Maintenance and Repair.....	$8,535,000	+$490,000
Funded from Reimbursements		
Operation and Maintenance of Quarters.....	2,970,000	+30,000
Net Change.....		+$520,000

Purpose and Method of Operation

The IHS operates and maintains 45 hospitals, 71 health centers, several hundred health stations, over 2,249 units of personnel quarters, numerous warehouses, boiler plants, maintenance shops, government automotive garages, emergency power plants and buildings, etc., which total over 7.6 million gross square feet of floor space. In addition, IHS also controls and maintains over 121,281 square feet of leased facilities and a total of 1,826.7 acres of institutional and trust land.

One of the vital elements of patient care is the IHS Facilities Management System. This system is used to organize and approach facilities work planning by annual objectives and the prudent application of the maintenance and repair (M&R) fund and manpower resources. Facilities Management is concerned with the provision of adequate maintenance operations and timely, economical repair to all IHS owned and other health related facilities. Through this uniform management system, each IHS facility is reviewed on an annual basis for functional utilization, efficient operation, cyclic maintenance and dependable repair, required alterations, modernizations, renovations and final disposal. These indepth inspections are performed by a competent team of engineers of the Office of Engineering Services (OES), IHS Area Facilities Managers, commercial organizations, etc.

* Excludes Operation and Maintenance of Quarters reimbursements of $709,124 unobligated balance start of year (1986).

1/ Does not include $30,000 sequestered based on the Balanced Budget and Emergency Deficit Control Act of 1985, P.L. 99-177.

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Projected Maintenance and Repair Expenditures

	FY 1986 Revised Estimate	FY 1987 Estimate
1. Hospitals	$5,974,500	$6,317,000
2. Health Centers and Health Stations	853,500	903,000
3. Other	1,707,000	1,805,000
	$8,535,000	$9,025,000

Accomplishments

In FY 1985 actual obligations for the IHS Facilities Operations, Maintenance and Repair Program were $8.6 million. Of this amount, $6.0 million (70%) was applied toward daily operations and maintenance, Service Unit Service Contracts, Service Unit In-house repairs, Backlog of Essential Maintenance and Repair (BEMAR) and alteration type repairs as follows:

I. Daily Operations and Maintenance: Approximately $2.9 million were expended in the Areas of preventive maintenance of facilities and real property equipment, maintenance supplies, bench stock, temporary labor, Bio-Med equipment, management improvement, etc.

II. In-House Repairs: Approximately $.6 million was utilized for minor and miscellaneous repairs of facilities and equipment by station labors, i.e., broken windows, doors, floors, ceilings, roofs, etc.

III. Service Contract: Approximately $2.5 million was used for preventive maintenance, repairs and replacement of building equipment, i.e., boilers, refrigeration units, HVAC system, elevators, etc.

IV. BEMAR/Alteration Repair Projects: Approximately $2.6 million was applied toward reducing BEMAR, and correcting deficiencies relating to Fire, Life and Safety, handicapped, energy (low cost, no cost), environmental quality, etc.

In FY 1986, $2.4 million in special repairs and improvements is to be utilized to continue the correction of high priority BEMAR deficiency items. In addition, funds in the amount of $2.5 million from the regular annual maintenance and repair program is anticipated to be applied toward reducing BEMAR deficiencies which total over $70 million.

In FY 1986 IHS will continue to improve the management of IHS quarters rental income by closely monitoring and accounting for all available resources and in accordance with the statutes and OMB Circulars.

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A summary of each category of BEMAR deficiencies is as follows:

BEMAR by Category as of 12/31/85

Structural	$23,946,421
Mechanical	14,175,176
Electrical	6,790,646
Utility	2,600,301
Grounds	15,609,931
Quarters	9,060,931
Real Property Install Equipment (RPIE)	338,700
	$72,522,106

Alterations by Category as of 12/31/85

Patient Care	$15,328,834
Fire and Life Safety	4,232,116
Safety	1,668,915
Environmental Quality	2,945,326
Handicap Barrier Free	3,251,982
Energy Management	5,543,659
	$32,970,832

FY 1987 Budget Proposal

Funded from Direct Appropriation

Built-In Increase +$490,000

The FY 1987 request includes an increase of $490,000 to fund built-in cost increases and reflects the increased cost of completing maintenance and repair projects of IHS owned facilities.

Funded from Reimbursements

Operation and Maintenance of Quarters +$30,000

This increase reflects the effect in FY 1987 of funds sequestered in FY 1986 based on the Balanced Budget Emergency Deficit Control Act of 1985, P.L. 99-177.

In FY 1986 the IHS Headquarters Facilities Management Program provided the necessary mechanism to implement PL 98-473, Accounting for Rental Collection, utilizing the existing IHS Facilities Work Planning Policy. This policy prescribes the principles, policies, and procedures governing the overall IHS Facilities Management Work Planning Program. The major uses of IHS quarters rental reimbursements during FY 1982 through 1985 were in the areas of temporary maintenance personnel, security guards, operation and maintenance which included repairs to housing units, grounds, purchase of materials, supplies (sheetrock, paint, roof shingles), and household equipment (refrigerators, ranges, washers and dryers).

In FY 1987 it is anticipated that $3.0 million will be collected from IHS owned quarters rental units.

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MEDICARE AND MEDICAID

	FY 1986 Appropriation	FY 1986 Available after Sequestering	FY 1986 Revised Estimate	FY 1987 Estimate	Increase (+) Decrease (-)
	BA	BA	BA	BA	BA
Reimb.	($44,100,000) 1/	($43,860,000) 2/ 1/	($43,860,000) 2/ 1/	($69,100,000) 1/	(+$25,240,000)

Purpose and Method of Operation

Title IV, Access to Health Services, of P.L. 94-437 Indian Health Care Improvement Act, states that IHS shall be eligible to receive payments for services rendered to eligible Indians who are entitled to care under Title 18 and Title 19 (Medicare and Medicaid). The Act further specifies that the funds shall be used "...exclusively for the purpose of making any improvements in the facilities..." of such service which may be necessary to achieve compliance with the applicable conditions and requirements of the Act. During FY 1986, it is estimated that up to $43.9 million may be used from Medicare/Medicaid collections for correcting Joint Commission on Accreditation of Hospitals/Health Care Financing Administration (JCAH/HCFA) survey deficiencies. The FY 1987 projection of $69.1 million includes an estimated $8.0 million collections from private insurance. In addition, $25.2 million of the $69.1 million of Medicare/Medicaid and private insurers collections will be used to fund built-in cost increases and partially fund the program decrease in the Hospitals and Health Clinics Activity.

Title IV of P.L. 94-437 requires that each facility be surveyed, and an annual plan of correction be prepared for the deficiencies that have been cited by either the JCAH or Medicare (HCFA) survey teams. All hospitals operated by IHS are surveyed by the appropriate agency (JCAH or HCFA), and the results of these surveys are used to formulate the plans of correction. These plans address each deficiency in terms of personnel costs, equipment needs, or maintenance and repair project needs to correct the cited deficiencies. In addition, the facilities are reviewed for compliance with new standards as they are published to ascertain any needs generated by such standards which must be met to maintain accredited/certified status. These plans are then approved by IHS Headquarters and the use of Medicare/Medicaid collections is authorized for deficiency corrections.

For those hospitals that are not accredited by the JCAH, surveys are performed by DHHS Regional Offices using the standards required by HCFA for participation in the Medicare Program. These standards closely follow the JCAH standards in most hospital areas. Deficiencies cited by this group are handled the same way as JCAH deficiencies. Funds are also used to correct projected deficiencies, not only those cited.

1/ Represents estimated collections.
2/ Reflects a reduction of $240,000 from Medicaid reimbursements pursuant to the Balanced Budget and Emergency Deficit Control Act of 1985, P.L. 99-177.

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Surveys conducted by the JCAH using new and updated standards have shown that all facilities have at least some deficiencies. Correction of these deficiencies is mandatory if the facilities are to attain and maintain accreditation and/or Medicare certification status. Medicare and Medicaid funds have been used mainly for facility maintenance, repair, and personnel.

Accomplishments

The purpose (according to P.L. 94-437, as amended) for use of Medicare/Medicaid and other third-party collections is to "...make any improvements in the facilities..." of the IHS necessary to meet the standards and conditions of Titles XVIII and XIX of the Social Security Act. Meeting these standards is one of the best assurances that the quality of the health care delivered to the Indian people is equal to that required for other Medicare and Medicaid patients. The great progress made by IHS over the past 8 years provides evidence that the quality of the IHS delivered health care is equal to or better than that required by Medicare. This conclusion based on the fact that all IHS facilities are certified as Medicare or Medicaid providers. In and of itself this accomplishment is no small feat.

During FY 1985, $31.1 million of $32.9 million in Medicare/Medicaid funds collected were used to correct deficiencies cited by JCAH or Medicare surveys. The major uses of Medicare/Medicaid expenditures in FY 1985 were in the areas of personnel, contracts, maintenance and repair, and equipment costs. Personnel costs were approximately $18.3 million, maintenance and repair costs and other costs were approximately $9.2 million, and equipment and supply costs were approximately $3.6 million.

Personnel funded from Medicare/Medicaid funds during FY 1985 included registered nurses, practical nurses, nurse assistants, laboratory technicians, x-ray technicians, food service workers, and other professional and nonprofessional personnel needed to correct personnel deficiencies identified by the JCAH and the HCFA surveys. There were 711 IHS employees paid from Medicare and Medicaid funds. The IHS does not arbitrarily choose to fund personnel from Medicare/Medicaid collections since Congress mandates that the collections be utilized to attain and maintain JCAH accreditation and/or Medicare certification. The positions or services that are funded as personnel services are those services or staff that must be hired in addition to the existing staff in order to meet the standards of the JCAH or Medicare.

During FY 1985, equipment purchased included examining tables, laboratory refrigerators, stretchers, and blood collection equipment. Maintenance and repair projects included installation of a new elevator and establishment of preventive maintenance agreements for lab, x-ray, housekeeping, and other equipment. In most Areas, Biomedical Engineering Services, funded by Medicare and Medicaid funds as a part of the maintenance and repair program, constitute a large part of the recurring costs of this part of the Medicare and Medicaid accreditation and certification program. Consistent with the origin of collection and the facility plans of correction, each IHS Area will target their funds to facilities most in need.

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FY 1987 Budget Proposal

In FY 1987, the IHS plans to intensify efforts to bill, collect, and distribute reimbursements from third-party payers, including payment under the Federal Medical Care Recovery Act and other subrogations, in accordance with submitted and approved JCAH/HCFA survey plans of correction. The implementation of this plan is predicated upon necessary authorities being granted to IHS to bill, collect, and use reimbursements from third-party payers (private insurance companies) for services provided in IHS facilities to Indian patients who have private insurance coverage.

The following table reflects a tentative distribution of Medicare/Medicaid collections:

	In Millions of Dollars	
Medicare/Medicaid	FY 1986	FY 1987
Personnel Services (Including Contracts)	$24.0	$31.6
Maintenance and Repair	11.9	6.3
Equipment (Including Supplies)	8.0	6.0
Build-In Cost Increases and the program decrease in Hospitals and Health Clinics Activity	0.0	17.2
Total	$43.9	$61.1
Private Insurers		
Used to partially fund the program decrease in the Hospitals and Health Clinics Activity	---	$ 8.0
Total	$43.9	$69.1

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1. Clinical Services

(b) Contract Care

	FY 1986 Appropriation	FY 1986 Available after Sequestering	FY 1986 Revised Estimate	FY 1987 Estimate	Increase (+) Decrease (-)
	BA	BA	BA	BA	BA
Direct Appropriation.	$170,040,000	$168,340,000	$165,866,000	$138,000,000	-$27,866,000
Reimbursements.	---	---	---	---	---
Total	$170,040,000	$168,340,000	$165,866,000	$138,000,000	-$27,866,000

Funded From
Direct Appropriation:

	1986 Base	Change from Base
Increase:		
Built-In		
Increased Cost of Health Care Provided under Contracts or Grants.....	$165,866,000	$ 9,952,000
Decrease:		
Program		
Proposed Program Reduction in the Contract Health Services Program.....	$165,866,000	-$37,818,000
Net Change.....		-$27,866,000

Purpose and Method of Operation

The purchase of medical care services from non-service providers (predominately the private sector) is an essential component of the IHS and tribal patient care delivery systems. These contract health services under governing regulations at 42 CFR 36 Subpart C are used to supplement other health care resources available to Indian people. Approximately 1,300 contracts exist with health care providers for services on a daily basis. Numerous additional purchase orders are issued during the course of a year for limited services, such as emergency care, from providers generally not utilized on a regular basis.

The Contract Health Service (CHS) program includes the purchase of General Medical and Surgical Hospitalization such as hospital, physician and other services incidental to inpatient care. Ambulatory care services, including services such as outpatient physician care, laboratory, x-ray and pharmacy are also included within the program. Limited patient and escort travel and dental services are provided. Other costs are incurred to support the direct delivery of care, such as medical referrals, diagnostic services, and needed specialist consultations.

In order to achieve the goal of raising the health status of American Indians and Alaska Natives, funds used in the CHS program must be utilized with certain priorities in mind. The IHS funds are primarily used for an urgent and emergent care priorities. Contract health service funds will be expended for emergency services, only to the extent that a non-IHS facility is the nearest

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available provider capable of providing the necessary services. Guidelines have been developed and implemented to increase the effective and efficient use of IHS contract health service funds. The guidelines established specific responsibilities for administration of CHS, including medical priorities for use of the funds, authorization and fund control procedures and specific criteria identifying persons to whom CHS will be provided. Under these guidelines, CHS funds are not to be expended for services that are reasonably accessible and available at an IHS facility or from alternate resources such as Medicare, Medicaid, state and local programs, and private insurance.

These guidelines provide that non-emergency services are not to be authorized for payment for patients considered to have reasonable access to IHS direct services. Patients residing within 90 minutes surface transportation time to an IHS facility capable of providing the required services are considered to have reasonable access to direct services.

The decline in the average daily patient load is consistent with national trends towards shorter hospital lengths of stay and the increase in utilization of ambulatory services. The inpatient activity consumes approximately 50% of the total CHS funding. Ambulatory Care is projected to increase at a rate of approximately 10% in cost per visit in FY 1987. Dental service costs are expected to rise by 6%, which is expected to provide services in FY 1987 at a level that is less than in FY 1986.

Accomplishments

Improvement in allocation of resources has resulted in better use of IHS clinical funds and greater equity in the overall distribution of resources.

FY 1987 Budget Proposal

The IHS will issue a General Notice requiring contract providers to accept reimbursements at a level not exceeding the amount allowed by Medicare for similar services. The FY 1987 allowance of $138 million for contract health services assumes that: 1) IHS will be able to negotiate lower rates with contracting facilities wherever possible and 2) IHS will be able to initiate capitation contracts in places with a relatively high concentration of Indians and a competitive health market.

Funded from Direct Appropriation

Built-In Increase +$9,952,000

The FY 1987 request includes an increase of $9,952,000 for the increased cost of providing health care through the contract or grant mechanisms.

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Program Decrease -$37,818,000

The FY 1987 program decrease in the amount of $37,818,000 will result in the following reductions from the FY 1986 estimates:

Hospital - Admissions	-5,902
Days	-27,740
Average Daily Patient Load	-76
Ambulatory Outpatient Visits	-70,212
Patient & Escort Trips	-10,358
Dental Patients	-9,925

Impact Data

The principal uses of contract health care funds are as follows:

	1985 1/ (Provisional)	1986 Appropriation	1986 After Sequestering	1986 Revised	1987 Estimate
Medical and Surgical Hospitalization					
Cost per day	$773	$828	$828	$828	$887
Ave. daily patient load	290	280	277	273	212
Dollars ($000s)	$81,708	$84,680	$83,833	$82,601	$68,724
Ambulatory Care					
Cost per visit	$120	$132	$132	$132	$145
Number of visits	237,517	242,178	239,757	236,233	178,924
Dollars ($000s)	$30,902	$31,968	$31,648	$31,183	$25,944
Patient and Escort Travel					
Cost per one-way trip	$144	$158	$158	$158	$174
Number of trips	37,305	35,515	35,160	34,643	26,172
Dollars ($000s)	$5,372	$5,611	$5,555	$5,474	$4,554
Dental Services					
Cost per patient	$186	$197	$197	$197	$203
Number of patients	41,161	40,568	40,162	39,572	31,951
Dollars ($000)	$7,656	$7,992	$7,912	$7,796	$6,486

1/ Past year data on the budget normally reflects obligated dollars rather than actual expenditures. FY 1985 cost per unit data is however expenditure related. Although funds are obligated within the fiscal year, expenditures are made for an additional period of time. Approximately 75 percent of the expenditure data are available within the fiscal year. Approximately 95 percent of the expenditure data are available within a two year period.

Other contract health service funds are used primarily to support direct care in IHS facilities -- e.g., consultations, laboratory, and x-ray that are considered to be required in order to provide adequate direct care.

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2. Preventive Health

	FY 1986 Appropriation		FY 1986 Available after Sequestering		FY 1986 Revised Estimate		FY 1987 Estimate		Increase (+) Decrease (-)	
	FTEs	BA	FTEs	BA	FTEs	BA	FTEs	BA	FTEs	BA
Direct Appropriation...	791	$65,408,000	750	$64,754,000	750	$53,669,000	750	$38,322,000	--	-$15,347,000
Reimbursements...	--	85,000	--	85,000	--	85,000	--	85,000	--	---
Total	791	$65,493,000	750	$64,839,000	750	$53,754,000	750	$38,407,000	--	-$15,347,000

	1986 Base	Change from Base
Increases:		
Built-in:		
1. Increase in FICA Payments	$ N/A	$ +7,000
2. Within Grade Promotions	N/A	+522,000
3. Increased Cost of Medical and Other Supplies	1,654,000	+103,000
4. Increased Cost of Health Care Provided under Contracts or Grants	4,416,000	+612,000
5. Increased Cost of Rents, Communications, and Utilities	55,000	+3,000
6. Increased Cost of Travel and Transportation of Things	3,404,000	+184,000
7. Increased Cost of Medical and Other Equipment	109,000	+5,000
Decreases:		
Built-In:		
Non-Recurring Cost of Alaska Hepatitis B and Immunization Program	2,678,000	-2,283,000
Decrease:		
Program:		
Community Health Representative Program Eliminated in FY 1987	14,500,000	-$14,500,000
Net Change		-$15,347,000

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(a) Sanitation

	FY 1986 Appropriation		FY 1986 Available after Sequestering		FY 1986 Revised Estimate		FY 1987 Estimate		Increase (+) Decrease (-)	
	FTEs	BA	FTEs	BA	FTEs	BA	FTEs	BA	FTEs	BA
Direct Appropriation...	455	$20,804,000	428	$20,596,000	428	$20,596,000	428	$21,334,000	--	+$738,000
Reimbursements...	--	24,000	--	24,000	--	24,000	--	24,000	--	---
Total	455	$20,828,000	428	$20,620,000	428	$20,620,000	428	$21,358,000	--	+$738,000

Funded From
Direct Appropriation

Increases:	Base If Applicable	Change
Built-in:		
1. Increase in FICA Payments	$ N/A	$ +5,000
2. Within Grade Promotions	N/A	+306,000
3. Increased Cost of Medical and Other Supplies	674,000	+41,000
4. Increased Cost of Health Care Provided Under Contracts or Grants	984,000	+244,000
5. Increased Cost of Rent, Communications, and Utilities	55,000	+3,000
6. Increased Cost of Travel and Transportation of Things	2,418,000	+134,000
7. Increased Cost of Medical and Other Equipment	109,000	+5,000
Net Change		+$738,000

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Purpose and Method of Operation

Most American Indians and Alaska Natives live in an environment typified by severe climatic conditions; rough, often treacherous geography; extreme isolation; the ever present danger of plague and rabies outbreaks; infestations of disease carrying insects and rodents; unsanitary methods of sewage and garbage disposal; and unsafe water supplies. This harsh environment, coupled with decades of economic deprivation and compounded by the lack of basic environmental essentials (such as running water and toilet facilities within the home), has contributed significantly to the exceptionally high incidence of disease, injury and early death among the Indian and Alaska Native people, most particularly among infants. For example, many accidental deaths and injuries are caused by environmental hazards; e.g., inadequate electrical wiring, deteriorated structural components in and around the home (stairs, railings, chimneys, etc.), broken glass, jagged metal, use of unsafe heating and lighting equipment, etc. These hazards inevitably manifest themselves in the hospital emergency room. The age-adjusted accident mortality rate in 1979 for American Indians and Alaska Natives was 140.7 per 100,000 people. Concomitant with IHS emphasis on injury control, the 1980 rate dropped sharply to 107 and continued to drop through 1982 to 93.3 per 100,000. Even though this is an encouraging trend the 1980 rate was 2.3 times the U.S. rate for all races (39.8/100,000).

The development of solutions to these problems requires the knowledge and expertise of a variety of professional and technical environmental health personnel and allied health specialists. The sanitation staff includes engineers, sanitarians, environmental health technicians, engineering aides, injury control specialists, etc.

Approximately 42 percent of the environmental health staff is of Indian descent. The IHS also trains tribal employees to provide environmental health services through a contractual arrangement wherever a tribe desires, provided that fund availability and other considerations make such an arrangement practicable. During FY 1985, 37 contracts were awarded to 27 tribes and 6 native groups to perform one or more types of environmental health services on their reservations or in their communities. Under these contracts an estimated 55-60 tribal members were employed.

Concurrent with the provision of technical and consultative environmental health services as set forth above, personnel funded under the sanitation subactivity also provide technical services necessary to construct critically needed sanitation facilities for American Indian and Alaska Native homes and communities.

Once a sanitation facility is built, the Indian families and/or community for which it was constructed assume the responsibility for operation and maintenance including the payment of all operation and maintenance costs.

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Therefore, a primary responsibility of the IHS sanitation staff is the provision of technical assistance and guidance to Indian families and communities in the operation and maintenance of essential water supply and sewage disposal facilities. Where appropriate, IHS helps the tribes and communities create operation and maintenance organizations and establish user fees so that operation and maintenance expenses will be borne by the users of the systems.

The availability of technical assistance from IHS has contributed significantly to the ability of small communities and rural families to keep their facilities in working condition. Sustained operation and maintenance of these facilities by the tribes and communities is necessary to protect the enormous preventive health investment that has been made on behalf of the American Indians and Alaska Natives by the Federal Government.

Accomplishments

The following tables (A and B) list the major types of general environmental health services provided and the training sessions conducted by IHS staff or by tribally employed personnel working under the technical direction or supervision of IHS environmental health professionals.

A. Surveys, investigations, technical consultations, meetings, construction services, surveillance and technical administrative services involve the following:

	Services FY 1985*
Hospitals, Health Centers, Schools, Jails and other institutions	19,764
Indian Homes and Communities	7,363
Water Systems	68,012
Sewer Systems	32,805
Solid Waste	3,501
Community Injury Control	25,960
Food Sanitation	11,822
Radiological Health (x-ray safety)	5,932
Control of Insects and Rodents and other disease carrying vectors	29,589
Disease Outbreaks	3,309
Rabies Control (27,987 animals immunized in FY 1985)	1,225
Water Supply Surveillance	18,855
Food and Milk Sampling	218
Air Pollution Surveillance	1,004
Trading Post Sanitation	615
Tribal Celebration Grounds Sanitation	2,405
Emergency Situations such as Floods, Windstorms, Spills, etc.	1,455
Recreational Sanitation	1,349

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	Services FY 1985*
Community Clean-up Campaigns	701
Occupational Safety	9,768
Industrial Hygiene	3,389
Water & Sewer System Operation & Maintenance Assistance to Tribes	13,187
Total	262,248 1/

*Does not include 140,723 planning and administrative services.

1/ This total is significantly lower than previous years because of the introduction of a revised reporting system during FY 1985.

B. Training activities for individuals and groups:

	Sessions	Persons Attending
Food Service Personnel	543	8,428
Water and Sewer System Operators	417	1,096
Homeowners	254	737
Community Injury Control	3,552	107,525
Solid Waste Management	42	684
Vector Control, including Rabies & Plague	210	8,170
Institutional	207	1,427
Other Environmental Health Factors	610	9,556
Total	5,835	137,623

FY 1987 Budget Proposal

Funded from Direct Appropriation

Built-In Increase +$738,000

The FY 1987 request includes an increase of $738,000 to fund built-in cost increases. Included in this increase is $5,000 for the increase in FICA payments; $306,000 to fund within grade promotions in accordance with section 5335 of Title 5, U.S.C.; $244,000 to fund the increased cost of providing health care through the contracts or grants mechanisms; $183,000 to fund inflationary costs associated with program operations in such areas as purchasing supplies, materials, and equipment used in the provision of environmental health services, program travel and transportation of things, and increased cost of rent, communications, and utilities. This increase will essentially maintain the same level of service as projected for FY 1986.

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Impact Data

Workload Projections

The FY 1987 request will provide for the following estimated workloads:

	1985	1986 Revised	1987 Estimate
Environmental Health Services	262,248	259,000 1/	259,000 1/

1/ These estimates are significantly lower than previous years because of the introduction of a revised reporting system during FY 1985.

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(b) Public Health Nursing

	FY 1986 Appropriation		FY 1986 Available after Sequestering		FY 1986 Revised Estimate		FY 1987 Estimate		Increase (+) Decrease (-)	
	FTEs	BA	FTEs	BA	FTEs	BA	FTEs	BA	FTEs	BA
Direct Appropriation...	276	$12,441,000	269	$12,317,000	269	$12,317,000	269	$12,851,000	--	+$ 534,000
Reimbursements...	--	48,000	--	48,000	--	48,000	--	48,000	--	---
Total	276	$12,489,000	269	$12,365,000	269	$12,365,000	269	$12,899,000	--	+$ 534,000

Funded From
Direct Appropriation

	1986 Base	Change from Base
Increases:		
Built-in:		
1. Increase in FICA Payments	$ N/A	$ +2,000
2. Within Grade Promotions	N/A	+175,000
3. Increased Cost of Medical and Other Supplies	456,000	+29,000
4. Increased Cost of Health Care Provided Under Contracts or Grants	2,709,000	+288,000
5. Increased Cost of Travel and Transportation of Things	791,000	+40,000
Net Change		+$534,000

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Purpose and Method of Operation

Public Health Nursing (PHN) is the integration of nursing practice and public health practice applied to the promotion and preservation of the health of the population. The public health nurse, therefore, has responsibilities in general and comprehensive areas of health practice for: (a) identifying health needs of the individual, the family and the community; (b) assessing health status and health practices; (c) implementing health planning based on individual and/or family care plans and community profile; (d) providing primary health care; and (e) evaluating the impact of health activities on the community. The nature of this practice is continuous and comprehensive, including all ages and diagnostic groups. PHN is directed to individuals in families and groups and relates to and contributes to the health of the total community. Therefore, the dominant responsibility of the public health nurse is to the tribe as a whole. In view of the scope of practice, the public health nurse incorporates into practice knowledge of biological, psychological and social sciences, as well as knowledge of clinical nursing, community and social organizations, and ecology. The primary focus of PHN is on the prevention of illness and the promotion and maintenance of health. Therefore, PHN practice includes the provision of needed therapeutic services, counseling, education, coordination, and advocacy activities. The public health nurse, who is in constant contact with people in groups that seek and need health care, has unique opportunities to identify actual and potential health problems. The public health nurse is involved in the planning and coordination of health programs and services.

Program efforts will be concentrated on coordination of team efforts both within PHN groups and with other health personnel. These efforts include:

a. Collaboration with other IHS staff and American Indians and Alaska Natives to plan for coordinated and expanded services

b. Prevention of complications of pregnancy and improvements of the general health status of expectant mothers and their infants through family planning education and early care of pregnant women

c. Further reduction of infant morbidity and mortality through early visits to newborns, and by giving highest priority care to high risk infants

d. Follow-up of communicable disease cases including contact investigation

e. Strengthening of health teaching in homes, hospitals, clinics, schools, and the community, with the goal of preventing disease or reducing the ill effects of disease; teaching a member of the family to give nursing care to the non-hospitalized sick and handicapped; development of habits conducive to health; and increasing the capability of families, groups, and communities to cope with health problems associated with problems of daily living

f. Provision of counseling and guidance in health and family living to teenagers and young adults

g. Prevention of infectious disease in infants and children by achieving and maintaining a high level of immunization

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Accomplishments

In FY 1985, Albuquerque and Billings PHN programs were accredited by the National League for Nursing. IHS program reviews were completed in Aberdeen, Billings, and Nashville Areas.

A new data key-tape reporting system was introduced to replace the 15 year old Mark Sense reporting system. There has been difficulty with the key punching and the computer program of the revised form which has caused problems with the data, especially for the number of services provided.

The percentage of the PHN budget which is utilized for tribal contracts has increased 9% from 26 to 35% or approximately $4,300,000. This is 15% more than the average categorical budget. The tribal PHN are reporting better than ever before as a result of the push for improved accountability.

The total number of families which received services increased by 3,511 or 7.5% over FY 1984. There was a 26.7% (1,954) increase in PHN home visits to prenatals and an 11.4% (757) increase in home visits to postnatals. PHN admissions for neoplasms increased by 19.4%, cardiovascular increased by 13.3%, and diabetic admissions increased by 21.1%. These changes indicate a shift from prevention to care of the chronically ill, especially in the growing older population.

The discipline of PHN has revised their appraisal tool. The primary components for the Management Information System have been identified which include many improvements in the quality assurance and patient care activities.

FY 1987 Budget Proposal

Funded from Direct Appropriation

Built-In Increase +$534,000

The FY 1987 request includes an increase of $534,000 to fund built-in cost increases. Included in this increase is $2,000 for the increase in FICA payments; $175,000 to fund within grade promotions in accordance with Section 5335 of Title 5, U.S.C.; $288,000 to fund the increased cost of providing health care through the contracts or grants mechanisms which include funding for salary increases planned under vendor personnel systems. These grants and contracts provide health teaching, communicable disease prevention services, and services for maternal and child health. Also included is $69,000 to fund inflationary costs associated with program operations in such areas as purchasing supplies, and materials used in the provision of PHN services, and program travel and transportation of things. This increase will essentially maintain the same level of services as projected for FY 1986.

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Impact Data

Workload Projections	1985	1986 Revised	1987
Public Health Nursing Services	608,575	610,000	610,000
Number of Families Served	50,459	55,000	55,000

The FY 1985 workload includes 233,588 services to 11,795 families provided by tribal groups. The projected workload for FY 1986 and FY 1987 includes an estimated 235,000 services to 11,800 families to be provided by tribal groups.

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(c) Health Education

	FY 1986 Appropriation		FY 1986 Available after Sequestering		FY 1986 Revised Estimate		FY 1987 Estimate		Increase (+) Decrease (-)	
	FTEs	BA	FTEs	BA	FTEs	BA	FTEs	BA	FTEs	BA
Direct Appropriation...	60	$3,614,000	53	$3,578,000	53	$3,578,000	53	$3,742,000	--	+$164,000
Reimbursements...	--	13,000	--	13,000	--	13,000	--	13,000	--	---
Total	60	$3,627,000	53	$3,591,000	53	$3,591,000	53	$3,755,000	--	+$164,000

Funded From
Direct Appropriation

	1986 Base	Change from Base
Increases:		
Built-in:		
1. Within Grade Promotions	$ N/A	$+41,000
2. Increased Cost of Medical and Other Supplies	524,000	+33,000
3. Increased Cost of Health Care Provided Under Contracts or Grants	723,000	+80,000
4. Increased Cost of Travel and Transportation of Things	195,000	+10,000
Net Change		+$164,000

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Purpose and Method of Operation

The IHS goal for the Health Education program is to assist the Indian people to adopt health-promoting lifestyles; wisely select and use health care resources, products and services; and influence policy and planning on health care issues and larger environmental matters that affect health.

The Health Education program is concerned with the organized approach to all educational deficiencies related to specific disease as well as health and safety hazards, which can be prevented among the American Indian and Alaska Natives.

The ultimate objective of health education is to utilize its educational and behavior change skills to motivate the beneficiaries to assume the major responsibility for taking action to bring about the best possible health. The traditional Health Education program components within the IHS include school health education services, community health education services, patient education services, staff health education support services and tribal program development.

Other health related activities are being provided by Indian tribes and Alaska Natives through contracts with the Indian Health Service under P.L. 93-638, the Indian Self-Determination Act, and P.L. 94-437, the Indian Health Care Improvement Act. Currently funded from P.L. 93-638 guidelines are 17 tribal contracts totalling $479,776 which enable tribes to provide health education services.

The goal of the Health Education program in FY 1987 is to reach 40% of the 1,013,000 Indians and Alaska Natives and to influence the lifestyle of the family and community. Health education will concentrate on prevention of alcohol and drug abuse, accident prevention, heart disease prevention and promotion of sound nutrition as the most epidemiologically relevant interventions.

Accomplishments

Educational activities in support of a broad based school health curriculum expanded the use of the comprehensive alcohol and drug curriculums. "Here's Looking at You," "Babes," and Project Charlie involved representatives from other organizations (BIA, tribes, local health and education agencies).

Video/taping services produced and distributed over 50 program tapes for tribal organizations, IHS Area offices, and PHS Regional offices at Denver and Atlanta (CDC). These services are provided through our health education offices at Rapid City, South Dakota, and Anchorage, Alaska.

The discipline of health education has been instrumental in implementing efforts for the IHS Employee Health Promotion Program.

Completed Phase II of the educational program for 21 IHS/tribal health educators (P.L. 93-638) entitled "Basics of Health Education." The program was designed for those who are working in the discipline but have not been trained professionally.

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FY 1987 Budget Proposal

Funded from Direct Appropriation

Built-In Increase +$164,000

The FY 1987 request includes an increase of $164,000 to fund built-in cost increases. Included in this increase is $41,000 to fund within grade promotions in accordance with Section 5335 of Title 5, U.S.C.; $80,000 to fund the increased cost of provided health care through contracts or grants mechanism which enable tribes to provide health education services in such areas as health promotion and disease prevention, smoking, hypertension, drugs, adolescent pregnancy, accident prevention, and nutrition; and $43,000 to fund inflationary costs associated with the program operations in such areas as purchasing supplies and materials used in the provision of health education services and the increased cost of program travel and transportation of things. This increase will essentially maintain the same level of services as FY 1986.

Impact Data

Workload Projections	1985	1986 Revised	1987 Estimate
Health Education Services.....	223,000 1/	223,000	223,000

1/ Figures are based on partial data available. The health education reporting system was changed in FY 1985 and some data was not tabulated in time for the report.

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(4) Community Health Representative (CHR)

	FY 1986 Appropriation	FY 1986 Available after Sequestering	FY 1986 Revised Estimate	FY 1987 Estimate	Increase (+) Decrease (-)
	BA	BA	BA	BA	BA
Direct Appropriation	$25,844,000	$25,585,000	$14,500,000	$ ---	-$14,500,000
Reimbursements	---	---	---	---	---
Total	$25,844,000	$25,585,000	$14,500,000	$ ---	-$14,500,000

Purpose and Method of Operation

The CHR Program was implemented to improve the health knowledge, attitudes and practices of Indian people by promoting, supporting, and assisting the IHS in delivering a total health care program. The efforts of the CHR program staff have produced an Indian and Alaska Native health service delivery system which provides for follow-up and continued contact with the health care delivery system at the community level, thereby meeting the most basic needs of the Indian and Alaska Native population.

The goal of the program is to address health care needs through the provision of community-oriented primary care services, including traditional native concepts in multiple settings, utilizing community-based, well-trained, medically-guided health workers.

The CHR program has allowed tribal governments to address their health care priorities in keeping with the intent of self-determination legislation. The program has demonstrated accomplishments in the areas of patient utilization of health services, tribal health program development and direct health care delivery.

An example of one of the most dramatic influences of the CHR program in tribal health delivery of direct health care is demonstrated by the accomplishments in Tribal emergency medical service programs and the immunization initiative. Many community based CHRs are EMT instructors and EMTs who provide the staff for the management and operation of ambulance service for Indian communities. In addition, others are trained as First Responders and equipped with mobile radios and medical kits. Without the active involvement of CHR personnel, many tribal ambulance service programs will not survive.

Many other essential health services are provided by CHRs. Non-emergency transportation is still essential to the provision of health care, especially to the elderly and those in rural settings. Information, education and technical assistance to effect a reduction in accidents and health hazards has effectively reduced health care and hospitalization needs.

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Accomplishments

Since the mandate by the 97th Congress for more accountability of CHR program resources, the IHS has developed a uniform scope of work and is field testing a mandatory reporting system, the Community Health Representative Information System (CHRIS), which is being implemented by all tribal contractors receiving CHR program resources. This is the beginning of the process to evaluate cost effectiveness, which leads into the Resource Requirement Methodology (RRM) for the allocation of CHR programs resources.

Preliminary analysis of the data collected in FY 1985 reveals that the cost per CHR encounter (group and individual) was $3.18.

The FY 1986 revised estimate of $14,500,000 will purchase 4,559,296 encounters from 1,500 CHRs through March 31, 1986.

FY 1987 Budget Proposal

Funded from Direct Appropriation

Program Decrease -$14,500,000

The FY 1987 request proposes elimination of the Community Health Representative Program in an effort to focus scarce federal resources on maintaining key inpatient and outpatient medical care services.

Impact Data

	1985 Actual	1986 Revised 1/	1987 Estimate
Encounters (Individual and groups of individuals).....	8,012,579	4,559,296	---

1/ Represents 6 months of service.

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(e) Hepatitis B Screening and Immunization Program (Alaska)

	FY 1986 Appropriation	FY 1986 Available after Sequestering	FY 1986 Revised Estimate	FY 1987 Estimate	Increase (+) Decrease (-)
	BA	BA	BA	BA	BA
Direct Appropriation..	$2,705,000	$2,678,000	$2,678,000	$395,000	-$2,283,000
Reimbursements..	---	---	---	---	---
Total	$2,705,000	$2,678,000	$2,678,000	$395,000	-$2,283,000

Funded From
Direct Appropriation

	1986 Base	Change from Base
Decrease:		
Built-In:		
Non-Recurring Cost of the Alaska Hepatitis B Program Screening and Immunization.....	$2,678,000	-$2,283,000

Purpose and Method of Operation

The funding components for the acute phase of the IHS Hepatitis Immunization project will come to a conclusion by the end of FY 1986. The contract mechanism under P.L. 93-638 proposals will allow the actual completion of the project (as opposed to the funding component) sometime in September 1987 enabling 5,000 persons will be screened for infection with hepatitis B virus and 12,000 persons immunized in FY 1987.

FY 1987 Budget Proposal

Funded From Direct Appropriation

Program Decrease -$2,283,000

The FY 1987 request of $395,000 reflects a built-in decrease of $2,283,000 for non-recurring costs. It will provide for the ongoing surveillance program which includes immunization of all newborns and new hospital staff as well as the continuation of the surveillance of persons chronically infected with the hepatitis B virus (chronic carriers). The Hepatitis B Control program in Alaska has reached all of the high risk villages and has the potential for eradicating this disease in Alaska Native villages. The approach used in this activity is unique in the world and communicable disease experts internationally are monitoring its performance.

Impact Data

Services Provided	1985 Actual	1986 Revised	1987 Estimate
Number of Patients Vaccinated.....	10,000	12,000	5,000
Number of Patients Screened.....	4,000	20,000	12,000

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PREVENTION
FY 1985

	Indian Health Operated	Tribal Operated	Total
1. Sanitation			
a. Services provided	229,248	33,000	262,248
b. Cost (dollars in thousands)	$19,317	$ 1,300	$20,617
2. Public Health Nursing			
a. Number of families served	38,644	11,795	50,459
b. Services provided	373,295	235,280 1/	608,575
c. Cost per service	$ 13.42	$ 10.94 1/	$ 15.50
3. Health Education			
a. Services provided	181,299	41,701	223,000 2/
b. Cost (dollars in thousands)	$ 2,914	$ 689	$ 3,603
4. Community Health Representative Program			
a. Number supported (CHRs)	0	1,500	1,500
b. Cost (dollars in thousands)	$ 85	$25,374	$25,459
5. Hepatitis B Screening and Immunization Program (AK)			
a. Services provided			
No. patients screened	10,000	0	10,000
No. patients vaccinated	4,000	0	4,000
	15,000 3/	0	15,000 3/
b. Cost (dollars in thousands)	$ 3,626	$ 0	$ 3,626

1/ Does not equate funds or data on services performed by tribal employees who are supported by other than PHS funding.

2/ Partial means that patients have received one or two of the three shot series; partials will be completed during the current fiscal year.

3/ Figures are based on partial data available. Health Education reporting system was changed in FY 1985 and some data was not tabulated in time for this report. Updated figures will be available soon.

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PREVENTION
FY 1986 Revised

	Indian Health Operated	Tribal Operated	Total
1. Sanitation			
a. Services provided	227,000	32,000	259,000
b. Cost (dollars in thousands)	$19,111	$ 1,485	$20,596
2. Public Health Nursing			
a. Number of families served	43,200	11,800	55,000
b. Services provided	375,000	235,000 1/	610,000
c. Cost per service	$ 13.86	$ 19.14 1/	$ 15.47
3. Health Education			
a. Services provided	181,299	41,701	223,000
b. Cost (dollars in thousands)	$ 2,919	$ 659	$ 3,578
4. Community Health Representative Program			
a. Number supported (CHRs)	0	1,500	1,500 2/
b. Cost (dollars in thousands)	$ 182	$14,318	$14,500 2/
5. Hepatitis B Screening and Immunization Program (AK)			
a. Service provided			
No. patients screened	12,000	0	12,000
No. patients vaccinated	20,000	0	20,000
b. Cost (dollars in thousands)	$ 2,678	$ 0	$ 2,678

1/ Does not include data on services performed by tribal employees who are supported by other than PHN funding.

2/ Represents 6 months of service.

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PREVENTION
FY 1987

	Indian Health Operated	Tribal Operated	Total
1. Sanitation			
a. Services provided	227,000	32,000	259,000
b. Cost (dollars in thousands)	$19,834	$ 1,500	$21,334
2. Public Health Nursing			
a. Number of families served	43,200	11,800	55,000
b. Services provided	375,000	235,000 1/	610,000
c. Cost per service	$ 14.21	$ 19.15 1/	$ 15.82
3. Health Education			
a. Services provided	181,299	41,701	223,000
b. Cost (dollars in thousands)	$ 3,043	$ 699	$ 3,742
4. Community Health Representative Program			
a. Number supported (CHRs)	0	0	0
b. Cost (dollars in thousands)	$ 0	$ 0	$ 0
5. Hepatitis B Screening and Immunization Program (AK)			
a. Service provided			
No. patients screened	5,000	0	5,000
No. patients vaccinated	12,000	0	12,000
b. Cost (dollars in thousands)	$ 395 2/	$ 0	$ 395 2/

1/ Does not include data on services performed by tribal employees who are supported by other than PHN funding.

2/ See budget narrative.

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Urban Health Programs

	FY 1986 Appropriation BA	FY 1986 Available after Sequestering BA	FY 1986 Revised Estimate BA	FY 1987 Estimate BA	Increase (+) Decrease (-) BA
Direct Appropriation..	$9,741,000	$9,644,000	$7,200,000	$ ---	-$7,200,000
Reimbursements..	---	---	---	---	---
Total	$9,741,000	$9,644,000	$7,200,000	$ ---	-$7,200,000

Purpose and Method of Operation

The IHS partially funds 37 urban Indian health organizations located in various cities throughout the United States to provide health services to the medically underserved urban Indian population.

The 37 programs are engaged in a variety of activities, ranging from the provision of outreach and referral services to the delivery of direct comprehensive ambulatory health care. Services currently being provided include medical, dental, community services, and a variety of other health related services, such as family planning, mental health, nutrition and health education, social services, alcohol and drug abuse, home health care, etc.

Accomplishments

In FY 1985, 162,563 medical services were provided along with 51,800 dental, 106,191 community services and 186,501 other health related services. A total of $9,589,307 was generated from other non-IHS sources by the 37 programs. Experience has shown that the IHS funding support enhances the ability of the programs to generate other sources of funding. The FY 1986 revised estimate will support all 37 ongoing projects at a level that will permit the gradual phase down of operations beginning April 1986.

FY 1987 Budget Proposal

Funded from Direct Appropriation

Program Decrease -$7,200,000

The FY 1987 request proposes elimination of the Urban Health program on the basis that the off-reservation Indians are eligible for alternative health care resources such as, Medicare/Medicaid, community health centers, the National Health Service Corps, State and local health care programs supported by Federal health block grants, and other State and local funding agencies.

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Indian Health Manpower

	FY 1986 Appropriation BA	FY 1986 Available after Sequestering BA	FY 1986 Revised Estimate BA	FY 1987 Estimate BA	Increase (+) Decrease (-) BA
Direct Appropriation..	$6,460,000	$6,395,000	$6,395,000	$5,418,000	-$977,000
Reimbursements..	---	---	---	---	---
Total	$6,460,000	$6,395,000	$6,395,000	$5,418,000	-$977,000

Funded From
Direct Appropriation:

	1986 Base	Change from Base
Increases:		
Built-in:		
Increased Cost of Providing Scholarships.....	$5,304,000	$ +114,000
Decreases:		
Built-in:		
Non-Recurring Costs of Manpower Program.....	$6,395,000	-1,091,000
Net Change.....		$ -977,000

Purpose and Method of Operation

Provision of health services depends upon a pool of trained health workers. In the case of the Indian health program it is even more vital to have trained community members.

IHS is experiencing shortages of the critical health manpower required to effectively provide health services. P.L. 94-437, Title I, Indian Health Manpower, authorizes the needed resources for the training of Indian health professionals and assists the IHS in coping with its manpower shortages.

Indian Health Manpower - Title I of P.L. 94-437

Within this Title there are provisions for scholarships, identification and recruitment of scholarship recipients, experiential summer employment and continuing education for IHS employees.

The five sections within Title I provide separate but interrelated authorities for addressing the identified shortages.

Section 102 - Health Professions Recruitment Program for Indians

This section provides grants for the purpose of identifying and recruiting Indians into health professions and for identifying and publicizing sources of financial aid and grants for other programs which will ensure the enrollment of Indians into health profession schools.

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Accomplishments

During FY 1985, there were five grants made to universities to support four Master of Public Health Programs (MPH) and the other to support the Indians into Medicine Program (INMED) at the University of North Dakota. These grantees provide a valuable service to the IHS manpower effort by providing assistance with the identification and recruitment of students for the IHS scholarship programs.

The Health Professions Recruitment Programs during FY 1985 were:

Universities

University of North Dakota -
Indians into Medicine (INMED)
University of California (MPH)
University of Oklahoma (MPH)
University of North Carolina (MPH)
University of Hawaii (MPH)

During FY 1985, these programs contacted over 1,590 Indian students for the purpose of providing career information and counseling. Additionally, these programs provided scholarships and career information to over 80 percent of all the new applicants for programs in public health. Students recruited by the grantees are Indians interested in returning to their tribes to provide services as health professionals.

Section 103 - Health Professions Preparatory Scholarship Program for Indians

This section provides support to students who, because of the inadequacy of their educational background, need compensatory education. The Preparatory Program is both preparatory and compensatory. It provides funding to students who need additional training or specific academic courses in order to qualify for health professions schools. It provides funding for students who are in health professions schools and need compensatory education; e.g., must repeat a course or take a course outside the required curriculum. Additionally, it provides funding for students who have completed a health professions school and need special compensatory training in order to successfully pass qualifying examinations.

Examples of individuals eligible for Section 103 scholarships are those who have:

1. Completed high school equivalency but need compensatory preprofessional education to enroll in health professions school.

2. Attained a Baccalaureate Degree but need compensatory preprofessional education to qualify for enrollment in health professions school.

3. Been enrolled in health professions school but are no longer enrolled and need preprofessional education to qualify for readmission to a health professions school.

Accomplishments

During FY 1985, 142 students were funded under the authority of the Health Professions Preparatory Scholarship Program for Indians.

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Section 103 - Pregraduate Education Program

The Pregraduate Education program was authorized by the passage of the Indian Health Care Amendments of 1980, P.L. 96-537 Sec. 3(b)(1)(2). These amendments provide:

> "(2) Pregraduate education of any grantee leading to a Baccalaureate Degree in an approved premedicine, predentistry, preosteopathy, preveterinary medicine, preoptometry, or prepodiatry curriculum, such scholarship not to exceed four years".

Accomplishments

During FY 1985, 88 students were funded under this authority. However, the funding was limited to students enrolled in premedicine curriculums.

Section 338-G PHS Act (Commonly Referred to as Section 104 - Health Professions Scholarship Program of the IHS)

This program provides scholarship support which includes tuition, fees, books, a stipend and other necessary financial aid to qualified individuals in health professions institutions who, upon graduation, will provide their professional services to Indian people. These services may be provided in the IHS Tribal Health Program, or an urban Indian health program funded under Title V of P.L. 94-437, or private practice in a health manpower shortage area providing services to a sufficient number of Indian people.

Accomplishments

During FY 1985, 369 students were funded under the authority of the Health Professions Scholarship Program.

Through FY 1985, 457 students have graduated; of these 376 students are scheduled to work, are already working for the IHS, or are among the 135 graduates who have completed their pay back in approved service. The remaining students are continuing in post-graduate programs or are working in other Indian health programs.

Section 105 - Indian Health Service Extern Program

This program provides employment during nonacademic periods for up to 120 days with IHS, tribal, or urban Indian health programs for recipients of Section 104 scholarships or others enrolled in health professions schools.

Accomplishments

During FY 1985, 85 students received extern assignments in IHS facilities throughout the U.S.

Section 106 Continuing Education 1/

The allowances provided under this section are used to provide continuing education for health professionals employed in the IHS. Continuing education opportunities are vital to attracting and retaining top quality health professionals, and are also frequently needed to maintain current licenses.

1/ Funded under Clinical Services.

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FY 1987 Budget Proposal

Funded From Direct Appropriation

Built-In Increase +$114,000
The FY 1987 request includes an increase of $114,000 to fund built-in cost increases related to the increased cost of scholarships.

Built-In Decrease -$1,091,000
The built-in decrease represents the non-recurring costs associated with the students who will graduate in 1986. Also included is a corresponding decrease in the number of extern assignments for the Section 338-G professional scholarship students based on the number of graduates in 1986.

The FY 1987 request of $5,418,000 will provide continuation scholarship funding for 358 students and 250 extern assignments for the professional scholarship students who are eligible and continues the Administration's policy of supporting only continuation scholarships and the IHMED and MPH Programs. No new scholarship awards will be made in an effort to focus scarce federal resources on maintaining key inpatient and outpatient medical care services.

An issue paper for HHS review is being prepared that addresses the focus, priorities, and the legislative changes needed to more effectively and efficiently manage the Indian Health Scholarship Program.

Impact of FY 1987 Request:

Section 102	-	5 projects
Section 103	-	103 students will be funded
Section 338-G	-	250 students will be provided scholarship support
Section 105	-	250 Section 338-G students will participate in the Extern Program
Section 106	-	-0- (supported under Clinical Services Activity)

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Impact Data

TITLE I
ACCOMPLISHMENTS AND OBJECTIVES
(Dollars in thousands)

Section	FY 1986 Appropriation		FY 1986 Available After Sequestering		FY 1986 Revised Estimate		FY 1987 Estimate	
102-Health Professions Recruitment Program	$ 504	5 Projects	$ 499	5 Projects	$ 499	5 Projects	$ 520	5 Projects
INMED	(279)	(1 Project)	(276)	(1 Project)	(276)	(1 Project)	(288)	(1 Project)
MPH Programs	(225)	(4 Projects)	(223)	(4 Projects)	(223)	(4 Projects)	(232)	(4 Projects)
103-Health Professions Preparatory Program	1,695	150 Scholarships	1,678	148 Scholarships	1,678	148 Scholarships	1,244	108 Scholarships
338-G-Health Professions Scholarship Program	3,360	298 Scholarships	3,326	295 Scholarships	3,326	295 Scholarships	2,863	250 Scholarships
105-Extern Program	901	298 Externs	892	295 Externs	892	295 Externs	791	250 Externs
106-Continuing Education	(100)	1/ Continuing Ed Experiences	(100)	1/ Continuing Ed Experiences	(100)	1/ Continuing Ed Experiences	(100)	1/ Continuing Ed Experiences
Total	$6,460		$6,395		$6,395		$5,418	

1/ Now funded under Clinical Services.

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Tribal Management

	FY 1985 Appropriation BA	FY 1986 Available after Sequestering BA	FY 1986 Revised Estimate BA	FY 1987 Estimate BA	Increase (+) Decrease (-) BA
Direct Appropriation..	$1,988,000	$1,968,000	$500,000	$ ---	-$500,000
Reimbursements..	---	---	---	---	---
Total	$1,988,000	$1,968,000	$500,000	$ ---	-$500,000

Purpose and Method of Operation

The concept of the Tribal Management program is self-help which has proven to be an effective approach to assisting Tribes to operate and manage their own health programs. This thrust on reservations toward self-sufficiency began in earnest with the passage of P.L. 93-638, the Indian Self-Determination Act, and its companion Act, P.L. 94-437, the Indian Health Care Improvement Act.

The Tribal Management program provides the necessary mechanism to implement capacity building activities, particularly with newly recognized tribes which have little or no development resources. Priority for use of these funds goes to new tribes for the support of planning efforts, training, resource development and management systems.

The IHS is in the 11th year of implementation of P.L. 93-638. Tribal management of health programs under authority of P.L. 93-638 contracts allows tribes to operate part or all of the health programs provided by the IHS. Since nearly all tribes wanting to manage IHS operated health programs need to development management capabilities, P.L. 93-638 provides the legal authority and the Tribal Management activity funds provide the resources to support such developmental activities. Tribal management funded projects have led to the development or improvement of program management systems including planning, evaluation, training, and other projects designed to improve the management capability of tribal organizations.

Tribes are in various stages of management system development. Each tribe proceeds at its own pace. Some tribes currently operate part or all of their health programs, while others are developing their management capacity through a P.L. 93-638 grant. Not all tribes choose to operate their health programs. Each condition is a fully acceptable Indian self-determination option.

The past need for Tribal Management funding support for developmental activities varied in the amount and length of time the funds were needed. Some activities such as feasibility studies required, on the average, two to three years for completion.

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Once a tribe has developed its capacity and begins to manage part or all of its health programs, the Tribal Management funds become available to support developmental projects for other tribes. The same tribe, however, may need Tribal Management funding support periodically to refine or learn new management techniques, implement improved management systems, train replacement tribal management personnel, or develop the capacity to take over additional components of the health program.

Accomplishments

As a result of providing assistance to tribal governments, the following accomplishments have been made in the delivery of health services by tribally operated health facilities:

	FY 1985
Number of hospitals operated by tribes	5
Number of admissions	3,678
Number of inpatient days	15,044
Number of outpatient visits	72,459
Number of free-standing clinics operated by tribes	284
Number of outpatient visits	595,192 1/

FY 1987 Budget Proposal

Funded from Direct Appropriation

Program Decrease -$500,000

In an effort to focus scarce Federal resources on maintaining key IHS inpatient and outpatient medical services in FY 1987, no funds are requested for the Tribal Management program. However, IHS will continue to provide technical assistance when requested by tribal management.

1/ Includes workload from an additional 36 locations where clinical services are provided but where no fixed tribal health care facility is available.

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Direct Operations

	FY 1986 Appropriation		FY 1986 Available after Sequestering		FY 1986 Revised Estimate		FY 1987 Estimate		Increase (+) Decrease (-)	
	FTEs	BA	FTEs	BA	FTEs	BA	FTEs	BA	FTEs	BA
Direct Appropriation.	1,456	$60,383,000	1,234 1/	$57,787,000	1,234	$57,787,000	1,167	$56,195,000	-67	-$1,592,000
Reimbursements.	--	---	--	---	--	---	--	---	--	---
Total	1,456	$60,383,000	1,234 1/	$57,787,000	1,234	$57,787,000	1,167	$56,195,000	-67	-$1,592,000

Funded from
Direct Appropriation:

	1986 Base		Change from Base	
	FTEs	BA	FTEs	BA
Increases:				
Built-in:				
1. Increase in FICA Payments	--	N/A	--	$ +8,000
2. Within Grade Promotions	--	N/A	--	+595,000
3. Increased Cost of Medical and Other Supplies	--	1,041,000	--	+44,000
4. Increased Cost of Contractual Services	--	3,135,000	--	+133,000
5. Increased Cost of Rents, Communications, and Utilities	--	730,000	--	+31,000
6. Increased Cost of Travel and Transportation of Things	--	4,192,000	--	+176,000
7. Increased Cost of Medical and Other Equipment	--	1,843,000	--	+77,000
8. Increased Cost of Printing	--	152,000	--	+6,000
Program:				
Resource and Patient Management System			--	+500,000
Subtotal				$+1,570,000
Decrease:				
Program:				
Direct Operations	1,234	57,787,000	-67	-$3,162,000
Net Change			-67	-$1,592,000

1/ Reflects a reduction of 41 FTEs related to the effect of the sequestering and 181 FTEs as a result of FTE restrictions.

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Purpose and Method of Operation

An important aspect of the delivery of health care to the American Indians and Alaska Natives is the management and administration of the IHS. The management of the IHS has changed remarkably over the time period from 1955 until present. The early management structures were highly centralized to permit direct control of the field activities. As the IHS grew in terms of personnel, budget, program scope, the management philosophy out of necessity, become one the decentralization. In addition, the management responsibilities brought on by a substantial increase in the volume of dollars and programs associated with tribal contracts dictates that the decentralization of management is an even greater necessity. The strength of decentralization lies in the fact that decisions can be made at the organizational level closest to the sources of information and expertise. This decentralization concept creates flexibility which permits timely and appropriate responses to unique situations.

The management of the IHS program consists of Headquarters and Area Office operations. The principal role of IHS Headquarters is to provide leadership and direction by coordinating and monitoring field activities, preparing statistical information, articulating policy, developing budgets and program plans, insuring proper implementation and evaluation activities, and providing operations management and community development activities. The Director and attendant staff coordinate the IHS activities and resources with those of other governmental programs.

The IHS administratively is divided into 12 Area Offices. Each Area Office is responible for: (1) participating in and establishing goals and objectives, applying IHS policies, and determining priorities with the framework of IHS policy in pursuit of the IHS mission; (2) ensuring the delivery of high quality, comprehensive health services; (3) coordinating IHS activities and resources internally and externally with those of other governmental and non-governmental programs to promote optimum utilization of all available health resources; (4) participating in the development and demonstration of alternative means and techniques of health services management and delivery to provide Indian tribes and other Indian community groups with optimal ways of participating in Indian health programs; and (5) assuring the development of individual and tribal capabilities to participate in the operation of IHS commensurate with the means and modalities which Indian tribal groups deem appropriate to their needs and circumstances.

The Area Offices provide program direction and administrative support to each of the 45 hospitals, 71 health centers and several hundred smaller health stations and satellite clinics. The administrative staff required to support the delivery of patient care services include contracting officers, purchasing agents, voucher examiners, billing agents, supply clerks, personnel officers, property management specialists, maintenance and repair engineers, and other occupational specialists. The professional staff in the Area Offices provide supervision and leadership to health programs provided at the service units and health facilities, including such programs as medicine, dentistry, nursing, pharmacy, laboratory, radiology, maternal and child health, etc. The Area Office Directors and staff assure that the overall objectives and policy of the IHS are implemented throughout the field locations.

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Accomplishments

The Indian Health Service (IHS) continues to actively pursue management initiatives that will result in increased efficiencies in carrying out its mission of providing the best possible health care to eligible Indian people.

For the past two years, the IHS has been examining its organizational structure toward the end of optimizing its effectiveness. The restructuring of the organization that has taken place over this period of time will be completed in FY 1986 and should result in a more appropriate marriage between functional activities and organizational components. The product of this will be an organizational structure that lends itself to management. For instance, all facilities construction, maintenance activities, and sanitation construction will be placed in a single organizational entity thereby improving the operation and coordination of these various activities. The IHS has also temporarily relocated certain functions its "Health Manpower Branch" to the Bureau of Community of Health Care and Delivery Assistance (BCHDA) in the PHS. BCHDA has had substantial experience in the administration of health education scholarships programs. Under BCHDA tutelage, IHS staff will be able to obtain the needed expertise and skills that will be of benefit to the administration of this IHS program over the long run.

The IHS remains committed to the review of the operation of its 12 Area Offices to assure the continued provision of high quality health care to American Indians and Alaska Natives in the most cost effective manner. In FY 1985 four such reviews were conducted, and in FY 1986, the IHS has scheduled 7 additional program reviews. Concurrently, the IHS is conducting an analysis of the staffing patterns of its Area Offices. The objective of this comparative assessment will likely result in changes in the allocation of staff to effect a more equitable staff distribution among Area Offices.

Quarterly meetings of the Director, IHS, his principal managers at Headquarters, and the 12 Directors of the IHS Area Offices, have been institutionalized to promote team building and improve coordination among top managers within the IHS.

The IHS continues to be committed to the career enrichment of its employees. Over the last two years, management skills training has been provided to virtually all middle managers within the IHS. Additional training will be provided IHS professional and support staff during FY 1986.

Other FY 1986 activities that will be undertaken by the IHS to improve management include a review of the P.L. 94-638 (i.e. Indian self-determination) policies and practices for the purpose of facilitating the management of this important IHS program; expansion of the IHS patient registration system in an effort to more precisely identify the population eligible for IHS services; and implementation of a phased allocation plan for the distribution of financial resources that will assist IHS in correcting inequities in funding among Headquarters and its 12 Areas. The commitment to expand the effort to maximize the utilization of the latest technology of automation in the management area will continue as resources permit.

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FY 1987 Budget Proposal

Funded from Direct Appropriation

Built-In Increase +$1,070,000

The FY 1987 request includes an increase of $1,070,000 to fund built-in cost increases. Included in this increase is $8,000 for the increase in FICA payments; $595,000 to fund within grade promotions in accordance with section 5335 of Title 5, U.S.C.; $133,000 to fund the increased cost of contractual services; $334,000 to fund the effects of inflation on the program in such areas as increased cost of supplies, equipment, rent, communications, utilities, printing, and the increased cost of program travel and transportation of things.

Program Increase +$500,000

The request includes an increase of $500,000 to continue and expand the development of the resource and patient management system (RPMS). The RPMS is an integrated facility based system which provides information which will permit managers to determine the resources required to support the delivery of health care services. Services provided in IHS facilities will be charged through itemized billing statements and through a system which distributes all administrative and operating costs into final cost centers. The overall costs for services delivered will be reflected through this system. A uniform approach covering manpower utilization, workload indicators and allocation of overhead costs will provide information which will permit managers to evaluate facility performance.

This increase of $500,000 along with funds appropriated in FY 1986 will enable IHS to devote $2,500,000 to this effort. These resources will be utilized primarily for the automation of IHS hospitals and health centers and tribal facilities through equipment acquisitions and installation.

The continued implementation of RPMS will result in an overall improvement in the management capability of IHS.

Program Decrease -$3,162,000 (-67 FTEs)

The FY 1987 budget request includes a program reduction of staff equivalent to 67 man-years and $3,162,000. This reduction will be accomplished primarily through the reduction in employment, but will also be reflected in a reduction of travel and transportation, supplies, and equipment. This reduction will be distributed among all of the staff who are engaged in activities at headquarters and Area Offices. Therefore, it will be necessary that their activities include administrative support functions such as fiscal services, procurement services, personnel services, property management services, and other administrative services. The reduction will also be distributed among administrative staff engaged in program direction activities including professional staff providing supervision and leadership to health programs provided at service units and health facilities in the areas of medicine, dentistry, nursing, pharmacy, laboratory, radiology, maternal and child health, etc.

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Direct Operation:
(Dollars in thousands)

	FY 1986	FY 1987	Change
1. Headquarters Management Activities:			
FTEs	253	239	- 14
Cost	$13,341	$12,961	-$ 380
2. Area Offices:			
FTEs	981	928	- 53
Cost	$44,446	$43,234	-$1,212
TOTAL			
FTEs	1,234	1,167	- 67
Cost	$57,787	$56,195	-$1,592

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INDIAN HEALTH FACILITIES

	FY 1986 Appropri-ation	FY 1986 Available After Sequestering	FY 1986 Revised Estimate	FY 1987 Estimate	Increase (+) Decrease (-)
Direct Approp...	$46,665,000	$46,198,000	$7,556,000	$2,450,000 1/	-$5,106,000

Purpose and Method of Operation

Hospitals - Modernization and Repair

The Indian Health Facilities construction program is concerned with the provision of medical and health facilities needed to provide health services directly to American Indians and Alaska Natives. Under the authority of P.L. 83-568, Transfer Act, the Indian Health Service undertakes major repair and modernization of existing facilities. Objectives of the modernization and repair program are: 1) to have all inpatient care facilities accredited by the Joint Commission on Accreditation of Hospitals, 2) to provide improved inpatient and outpatient care, 3) to maintain IHS health care facilities to meet existing building codes and standards and improve the IHS overall facilities management capability, and 4) to provide alternate energy sources and initiate energy conservation measures.

Accomplishments

In FY 1985, $2,086,000 was appropriated to address backlogged IHS facilities deficiency items. These projects are complete or currently under construction:

1. Ada, Oklahoma Hospital.....$115,000
   Energy retrofit projects.

2. Talihina, Okahoma Hospital-Personnel Quarters.....$218,000
   General repairs and improvements.

3. Gallup, New Mexico Medical Center.....$784,000
   Miscellaneous repairs and renovation of dietary area.

4. Phoenix, Arizona Medical Center.....$264,000
   General repairs and corrections of life safety and handicapped deficiency items.

5. Whiteriver, Arizona Hospital.....$391,000
   Interior modification and improvement in the areas of physical therapy, treatment rooms, emergency, etc.

6. Keams Canyon, Arizona Hospital.....$314,000
   General repairs and renovation of hospital.

1/ The Indian Health Facilities Program is proposed for transfer to the Indian Health Appropriation in FY 1987.

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1987 Budget Proposal

The FY 1987 request for modernization and repair of facilities of $2,450,000 provides for the following repair and improvement projects:

1. Ft. Yates, ND Hosp & Quarters and McLaughlin, SD Hlth Ctr ($ 400)

   The projects at Ft. Yates Hospital will be as follows: reroofing and insulating; replace door in radiology with fire-rated door; remove glass windows and replace with one hour partition; paint exterior trim; replace cooling tower; reset existing wall mounted lavatories; replace generator exhaust fan hood cover; replace tile with sheet vinyl in the following rooms: laundry and soiled linen rooms, bathroom, and dining room; replace vinyl asbestos tile floor with seamless vinyl; and replace exterior siding of 20 staff quarters. Projects at the McLaughlin Health Center will be as follows: replace windows in south wall of waiting room, install gutters and downspouts, replace furnace and oil tanks, provide new sheet vinyl flooring, remodel emergency ramp, install yard flood lights, and repair weatherstrip storm windows.

2. Bemidji Area (Cass Lake & Red Lake, MN Hosps and Kincheloe, MI Health Center) ($ 150)

   Install new canopy over exterior door, extend and repair lawn sprinkler system, replace outdated HVAC controls, provide alternate hot water heating source, expand employee parking area.

3. Sisseton, SD Hospital ($ 450)

   Install attic ladder; repaint, repair, reside exterior. Replace all water piping and fixtures, and all toilet fixtures. Upgrade HVAC for inpatient, kitchen, and administrative areas. Repair, upgrade, and replace all surfaces and coverings in inpatient function areas. Rewire all inpatient electrical wiring. Replace temporary OPD with new temporary OPD.

4. Mt. Edgecumbe, AK Hospital ($ 700)

   Install adequate ventilation system which includes blowers, motors, ducting, diffusions and associated equipment for JCAH discrepancies in acute care areas of the hospital.

5. Ft. Hall, ID Health Center-Personnel Quarters ($ 150)

   Repair and/or replace floors, walls, bathrooms, kitchens, heating, lighting, painting, etc.

6. Tuba City, AZ Hospital ($ 600)

   Funds will provide major modification to the hospital mechanical systems in order to provide a well balanced system in the various areas of the hospital and to comply with the Fire and Life Safety Code. The work involves updating and providing adequate duct systems, dampers, etc., correct the smoke detection systems, fire sprinkler systems, and miscellaneous Fire and Life Safety Code related deficiency items.

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DEPARTMENT OF EDUCATION

INDIAN EDUCATION

JUSTIFICATION FOR APPROPRIATION, FISCAL YEAR 1987

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Indian Education

[For necessary expenses to carry out, to the extent not otherwise provided, the Indian Education Act, $67,476,000 of which $30,323,000 shall be for part A and $14,820,000 shall be for parts B and C: Provided, That the amounts available pursuant to section 423 of the Act shall remain available for obligation until September 30, 1987.] 1/ (Department of the Interior and Related Agencies Appropriations Act, 1986, as included in Public Law 99-190.)

Explanation of Language Change

1/ The language for Indian Education is being deleted because legislation is being proposed for later transmittal.

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U.S. DEPARTMENT OF EDUCATION

HIGHLIGHT STATEMENT

INDIAN EDUCATION

The Indian Education Act of 1972 authorized several programs to improve educational opportunity for Indian children, college students, and adults. Indians have traditionally been among the most disadvantaged of United States citizens, and the special programs authorized and funded under the Indian Education Act have been directed at their special educational needs.

Currently authorized programs

Programs currently funded under the Indian Education Act include:

- Part A Grants for Local Educational Agencies
  - -- Formula grants for supplementary programs for Indian children in local educational agencies, including public school districts and Indian-controlled schools;
  - -- Discretionary grants to Indian-controlled schools for basic and supplementary educational programs.
- Part B Special Projects for Indian Students
  - -- Special projects for a variety of educational activities for Indian children;
  - -- Educational personnel development programs;
  - -- Fellowships for graduate and undergraduate students;
  - -- Resource and evaluation centers.
- Part C Special Projects for Indian Adults
  - -- Adult education programs.

About 380,000 Indian children aged 5-17 are enrolled in public and BIA schools (U.S. Census, 1980). About 330,000 of these children are counted for participation in one or more of the Department's Indian Education programs, although not all receive services. About 74 percent of those counted (244,000 children) actually receive services, since not every Indian child needs or wants to participate in special educational programs.

Other major programs serving Indian children

In addition to the Department of Education's Indian Education programs, the Department of Interior's Bureau of Indian Affairs (BIA) assists school districts and Indian-controlled schools through its Johnson-O'Malley program and Indian Student Equalization Program (ISEP). In 1985, the Departments in combination provided funds to about 1,345 public school districts and BIA-contract schools and counted about 357,000 Indian children for participation in their programs.

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Highlight Statement continued:

Educational progress by Indians

The Indian community has traditionally been severely disadvantaged on all educational measures. In the past, Indians received poorer grades, dropped out of school early, and were much less likely to attend college. The Indian illiteracy rate was very high. During the 1960s and 1970s, the Indian community achieved very real gains. By 1980, Indian children had higher grades and test scores than other minority children such as blacks and Hispanics. They had improved their attendance and persistance in school. However, because they still fall considerably below the majority population on all measures, special services are still needed.

Indian adults have had a severe problem with illiteracy and low basic education skills. By 1980, 56 percent of Indian adults, aged 25 and over, had completed high school, a 68 percent gain since 1970. By comparison, about 70 percent of the majority population had completed high school in 1980. Even with these gains, a sizable proportion of the adult Indian population needs educational assistance to complete high school or achieve literacy.

Problems with the current program structure

The current program structure and division of program responsibilities between the Department of Education and the Bureau of Indian Affairs severely impedes rational and efficient use of federal funding for Indian education. The principal problem areas are as follows:

- Support to Indian children enrolled in public schools -- the Department's Part A Grants to LEAs program and the BIA's Johnson-O'Malley (JOM) program both provide supplementary educational services to Indian children enrolled in public schools. More than 90 percent of children who receive Johnson-O'Malley services are in districts that receive Part A Grants to LEAs funding as well. The principal program difference is that JOM funds generally flow through Indian tribes while Part A funds flow through local school districts working with Indian parent committees. This duplicaitve arrangement leads to excessive administrative costs and hampers the planning and operation of coherant educational programs at the local level.

- Support for BIA-contract schools -- These schools receive basic operating support from BIA under the same allocation formula used for BIA-operated schools. Unlike BIA-operated schools, however, BIA-contract schools are also eligible for Indian Education Act assistance. In 1985, these schools received $7,065,000 under the Indian Education Act's Part A and Part B programs. As a result of these and other Federal funding sources, the Federal investment in BIA contract schools is much higher than the average investment in BIA-operated schools.

  Federal expenditures for BIA-contract schools are also very high compared to expenditures in comparable public schools. A recent Department of Education-funded study by Abt Associates found the average per expenditure to be $6,890, compared to $3,505 at comparable local public schools.

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Highlight Statement continued:

Although some of the BIA-contract schools had very good education programs, there was no clear evidence that the generally higher level of investment in contract schools has produced better education programs overall.

- Fellowships -- BIA and the Department of Education operate similar postsecondary fellowship programs. The Department's program makes awards to undergraduate and graduate students, and the eligible population includes members of non-federally recognized tribes. The BIA program currently makes awards to graduate students who are members of federally-recognized tribes. The Department of Education's program is not as well designed as BIA's with respect to targeting assistance on students most in need, and the extensive overlap in the potential applicant pool makes administrative coordination of the programs very difficult. The Department of Education also has very large student grant and loan programs for which these students are eligible, and since many Indian students come from low-income families they would be able to participate fully in these programs.

These problems may be resolved in large measure through the reallocation of funds in the Congressional appropriations process. Because of the need to make additional changes in the operation of selected activities the Administration is also proposing new legislation for the Department of Education's Indian Education programs for fiscal year 1987.

New legislation proposed

The Administration's legislative proposal reflects some of the changes which have occurred in the Indian population and aims to improve management of the programs for Indian children by reducing duplication and excess administrative costs.

A new program of grants to States would replace the existing Part A program of grants to local educational agencies, but would retain many of the features of that program, including strong Indian parent committees, required public hearings, and local needs assessments. States would distribute the funds to local school districts based on the number of Indian children in the schools and on criteria relating to educational or economic disadvantagement of the children, such as the number of Indian children from low-income families, the number of Indian children who score low on standard achievement tests, or the number of children in sparsely populated areas. If an LEA decided not to apply for funding, Indian tribes themselves could apply for funds to serve the children.

Under this proposal, funds would be provided for public school children, but not for Indian children in BIA-contract schools. The BIA-contract schools would continue to be eligible for BIA funding.

Funding for the State grant program would be approximately the same as was provided in 1986 for the Part A Grants to LEAs program, two small Part B programs, and BIA's Johnson O'Malley program. BIA is not requesting funds for the Johnson O'Malley Act.

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Highlight Statement continued:

Several Indian Education programs have primarily supported BIA-funded Indian-controlled schools or have provided most of their aid to children and students in federally-recognized tribes. These programs will not be extended in the new legislation. The Department's Indian Education programs will no longer provide aid for Indian-controlled schools. BIA's 1987 request has been increased by $11.5 million, about the same funding as the Department had for those programs in 1986, and would be used to improve BIA schools and higher education programs.

The current Indian adult education program would be extended under the new legislation, although the legislative language would be simplified, and emphasis would be placed on providing educational services to adult Indians rather than on developing model programs.

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DEPARTMENT OF EDUCATION

Indian Education

Appropriation, 1985	$68,780,000
Reduction pursuant to P.L. 98-473	-1,376,000
Total amount available, 1985	67,404,000
Appropriation, 1986	67,476,000
Reduction pursuant to P.L. 99-190	-405,000
1986 Sequester order	-2,884,000
Total amount available, 1986	64,187,000

SUMMARY OF CHANGES, 1986 to 1987

Grants for Indian children	
Change	+$22,453,000
Adult education	
Change	+143,000
Special programs for Indian students	
Change	-11,301,000
Program administration	
Change	+247,000
Total	
Net change, 1986 to 1987	+11,542,000
Budget estimate, 1987	75,729,000

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Indian Education
Analysis by Activity

	1985 Actual	1986 Appropriation	1986 Available after Sequestering	1987 Estimate	Change from 1986 Appropriation
1. Grants for Indian children:					
(a) State grants	---	---	---	$70,323,000	+$70,323,000
(b) Payments to local educational agencies and Indian-controlled schools (non-LEAs) (Part A):					
(1) Grants to LEAs	$45,913,000	$45,637,000	$43,675,000	---	-43,675,000
(2) Indian-controlled schools	4,410,000	4,384,000	4,195,000	---	-4,195,000
Subtotal	50,323,000	50,021,000	47,870,000	70,323,000	+22,453,000
2. Adult education	2,940,000	2,922,000	2,797,000	2,940,000	+143,000
3. Special programs for Indian students (Part B):					
(a) Projects for Indian children	5,880,000	5,845,000	5,593,000	---	-5,593,000
(b) Fellowships	1,470,000	1,461,000	1,398,000	---	-1,398,000
(c) Educational personnel development	2,156,000	2,262,000	2,165,000	---	-2,165,000
(d) Resource and evaluation centers	2,254,000	2,241,000	2,145,000	---	-2,145,000
Subtotal	11,760,000	11,809,000	11,301,000	---	-11,301,000
4. Program administration:					
(a) Salaries and expenses	2,156,000	2,097,000	2,007,000	2,180,000	+173,000
(b) National advisory council	225,000	222,000	212,000	286,000	+74,000
Subtotal	2,381,000	2,319,000	2,219,000	2,466,000	+247,000
Total obligations	67,404,000 1/	67,071,000	64,187,000	75,729,000	+11,542,000
Budget authority	67,404,000	67,071,000	64,187,000	75,729,000	+11,542,000

1/ Includes $116,390 contingently obligated under court order.

Indian Education

Authorizing Legislation

Activity	Legislative Citation	1986 Authorized	1987 1/ Authorized
Grants for Indian children:			
State grants	Proposed legislation	—	To be determined
Payments to local educational agencies and Indian-controlled schools	IEA, Part A Section 307, as amended by P.L. 98-511	Such sums as may be necessary	An amount not to exceed the 1986 appropriation
Adult education:			
Adult education	Proposed legislation	—	To be determined
Special projects for Indian adults	IEA, Part C as amended by P.L. 98-511	$8,000,000	An amount not to exceed the 1986 appropriation
Special programs for Indian students:	(As amended by P.L. 98-511)		
Planning, pilot, and demonstration projects.	) IEA		)
Educational services	) Part B,		) The amount
Educational personnel development	) Section 1005(g)	$35,000,000	) appropriated for such
Resource and evaluation centers	)		) purposes in 1986
Educational personnel training programs	IEA, Sec. 422	$2,000,000	)
Indian fellowships	IEA, Sec. 423	Not specified	)
Program administration:			
Program administration	Proposed legislation	—	To be determined
Program administration	IEA, Part D Sections 441 and 442, as amended by P.L. 98-511	Such sums as may be necessary	Such sums as may be necessary
Total definite authorization.		$45,000,000	---

1/ The proposed legislation (Indian Education Act of 1986) would end all programs currently authorized under the Indian Education Act and establish new programs of grants to States for Indian children and adult education.

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INDIAN EDUCATION

Funding Pattern

	1985 Actual			1986 Estimate 1/ after Sequestering			1987 Estimate		
	Applications Received	Awards Made	Total Funds Obligated	Applications Received	Awards Made	Total Funds Obligated	Applications Received	Awards Made	Total Funds Obligated
1. Grants for Indian children:									
(a) State grants	---	---	---	---	---	---	42	42	$70,323,000
(b) Payments to LEAs and Indian-controlled schools (Part A):									
(1) Grants to LEAs	1,144	1,131	$45,913,000	1,144	1,131	$43,675,000	---	---	---
(2) Indian-controlled schools	65	34	$4,410,000	65	34	$4,195,000	---	---	---
Subtotal	1,209	1,165	$50,323,000	1,209	1,165	$47,870,000	42	42	$70,323,000
2. Adult education	127	28	$2,940,000	130	27	$2,797,000	130	28	$2,940,000
3. Special programs for Indian students (Part B)									
Project awards	234	76	10,290,000	234	74	9,903,000	---	---	---
Fellowships	825	221	1,470,000	825	210	1,398,000	---	---	---
Subtotal	1,059	297	$11,760,000	1,059	284	$11,301,000	---	---	---
TOTAL	2,398	1,490	$65,023,000	2,398	1,476	$61,968,000	172	70	$73,263,000

1/ Reflects a reduction of $2,784,000 pursuant to the Balanced Budget and Emergency Deficit Control Act of 1985, P.L. 99-177.

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Indian Education

Effect of Sequester

	1986 1/ Appropriation	1986 Sequester	1986 Available after Sequestering
1. Payments to local educational agencies (LEAs) and Indian-controlled schools (non LEAs) (Part A).....	$50,021,000	-$2,151,000	$47,870,000
2. Special programs for Indian students (Part B).....	11,809,000	-508,000	11,301,000
3. Special programs for Indian adults (Part C).....	2,922,000	-125,000	2,797,000
4. Program administration:			
(a) Indian education programs.	2,097,000	-90,000	2,007,000
(b) Advisory council.....	222,000	-10,000	212,000
Subtotal.....	2,319,000	-100,000	2,219,000
Total.....	67,071,000	-2,884,000	64,187,000

1/ Reflects reduction of $405,000 pursuant to P.L. 99-190.

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Indian Education

Effect of Sequester

	1986 Appropriation	1986 Sequester	1986 Available after Sequestering
1. Payments to local educational agencies (LEAs) and Indian-controlled schools (non LEAs) (Part A).....	$50,021,000	-$2,151,000	$47,870,000

Effect of reduction

Funding data:

Grants to LEAs.....	$45,637,000	-$1,962,000	$43,675,000
Number of grants.....	1,131	—	1,131
Average award.....	$40,351	-$1,735	$38,616
Number of students eligible.	329,498	—	329,498
Federal share per student...	$138	-$5	$133
Grants to Indian-controlled schools.....	$4,384,000	-$189,000	$4,195,000
Number of grants.....	34	—	34
Average award.....	$128,941	-$5,559	$123,382
Number of students served...	5,850	—	5,850
Federal share per student...	$749	-$32	$717

Funds are distributed under the Grants to LEAs program to all eligible local school districts and Indian-controlled schools. The effect of the decrease will be to lower the average award and Federal share per student. The Indian-controlled schools program provides discretionary grants to Indian schools. Smaller awards will be made as a result of the reduction, resulting in a lower average award and Federal share per student.

	1986 Appropriation	1986 Sequester	1986 Available after Sequestering
2. Special programs for Indian students (Part B).....	$11,809,000	-$508,000	$11,301,000

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Indian Education

Effect of Sequester

2. Special Programs for Indian Students (continued)

	1986 Appropriation	1986 Sequester	1986 Available after Sequestering
Effect of reduction			
Funding data:			
Projects for Indian children..	$5,845,000	-$252,000	$5,593,000
Educational personnel development	2,262,000	-97,000	2,165,000
Fellowships	1,461,000	-63,000	1,398,000
Resource and evaluation centers	2,241,000	-96,000	2,145,000
Number of awards	77	-3	74
No. of children served	17,500	-500	17,000
No. of educational personnel trained	793	-36	757
No. of fellowships awarded	220	-10	210
Average award to resource and evaluation centers	$448,200	-$19,200	$429,000

Grants for projects for Indian children and higher education are awarded through competition. The reduction will be handled by reducing the number of awards and recipients benefitting. The resource and evaluation center contracts will be reduced proportionately.

	1986 Appropriation	1986 Sequester	1986 Available after Sequestering
3. Special programs for Indian adults (Part C)	$2,922,000	-$125,000	$2,797,000
Effect of reduction			
Funding data:			
Educational services	$1,169,000	-$50,000	$1,119,000
Planning, pilot, and demonstration	1,753,000	-75,000	1,678,000

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Indian Education

Effect of Sequester

3. Special programs for Indian adults (Part C) (continued)

	1986 Appropriation	1986 Sequester	1986 Available after Sequestering
Effect of reduction			
Number of awards	28	-1	27
Adults participating	9,500	-400	9,100

These grants are discretionary in nature and the reduction is taken through reducing the number of awards and the number of adults served.

	1986 Appropriation	1986 Sequester	1986 Available after Sequestering
4. Program Administration	$2,319,000	-$100,000	$2,219,000
Effect of reduction			
Funding data:			
Indian education program	$2,097,000	-$90,000	$2,007,000
National advisory committee	222,000	-10,000	212,000
Staffing (FTE)	49	-1	48

The reduction will be achieved through: delays in filling vacancies, decreases in travel, cuts in mailing costs, greater use of Federal rather than non-Federal field readers, deferral of data processing projects until 1987 and reduction in National Advisory Committee meetings to two meetings this year.

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1. GRANTS FOR INDIAN CHILDREN

	1985 Appropriation	1986 Appropriation	1986 Available after Sequestering	1987 1/ Estimate
Grants for Indian children:				
(1) State grants.....	---	---	---	$70,323,000
(2) Payments for local educational agencies and Indian-controlled schools (Part A):				
(a) Grants to LEAs....	$45,913,000	$45,637,000	$43,675,000	---
(b) Indian-controlled schools program...	4,410,000	4,384,000	4,195,000	---
	50,323,000	50,021,000	47,870,000	70,323,000

1/ Request based on proposed legislation.

Programs in Local Educational Agencies

Purpose and Method of Operation

1. State grants (proposed legislation):

A new program of grants to States is being proposed for Indian education. Grants would be made to State educational agencies which would in turn distribute most of the funds to local school districts for educational programs for Indian children who have need for special educational assistance. The SEAs would distribute these funds based on the number of Indian children in public school districts plus criteria relating to educational or economic disadvantagement, such as the number of Indian children from low income families, the number who score low on standardized achievement tests, or the number from sparsely populated areas. If an LEA did not wish to apply for the funds, a tribe could apply for the funds and provide the program.

LEAs would still be required to establish an Indian parent committee which must approve the LEA's application and be closely involved in the program's operation. As in the current Part A Grants to LEAs program, the committees would have approval authority over key aspects of the local projects. They help to insure that Indian parents become involved in their children's education and that the public schools are responsive to Indian communities' needs.

The types of activities funded would be similar to those permitted under the current program -- remedial and compensatory instruction in basic skills, support services such as school health and guidance and counseling, innovative approaches, special programs for the handicapped,

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Purpose and Method of Operation (continued):

gifted and talented programs, early childhood programs, and coordination with the many other Federal programs that serve Indian children.

Funds would be distributed as follows:

-- Allotments to States would be made on the basis of the prior year's enrollment of Indian children in public schools which plan to conduct a program under this authority, multiplied by the State or national average per pupil expenditure, whichever is higher.

-- A "hold harmless" requirement would prevent any State from receiving a major reduction from the funding that LEAs within the State received in 1986 under Part A of the Indian Education Act and the Johnson-O'Malley Act.

-- SEAs could retain up to 5 percent of the State allotment to use for administration and special programs.

The program would be current funded, but awards would be made later in the fiscal year and program activities would be carried out primarily during the next fiscal year.

2. Part A Grants to Local Educational Agencies (current legislation):

Under the Department's current program of grants for Indian children, grants are awarded to local educational agencies, including public school districts and BIA-contract schools, for supplementary activities to meet the special needs of Indian children. The projects provide such services as remedial reading and mathematics, counseling and guidance, language instruction and tutoring, and Indian cultural heritage activities.

The amount of an LEA's grant is based on a formula that multiplies its Indian student enrollment by the State average per pupil expenditure. The grant is then ratably reduced according to available appropriations.

Information from the Department's annual report to Congress on the FY 1984 Part A projects shows that a high proportion (about 74 percent) of eligible Indian students, many of whom are not educationally disadvantaged, actually receive services.

Most projects provide services at both the elementary and secondary education levels: 77 percent, both levels; 18 percent, elementary school only; 5 percent, secondary school only.

The distribution of activities offered is as follows:

Program Activity to Address Need	Percent of FY 1984 Projects Addressing Need
Academic skills	79%
Cultural enrichment	69
Personal counseling	39

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Purpose and Method of Operation (continued):

Program Activity to Address Need	Percent of FY 1984 Projects Addressing Need
Self-esteem	38%
Home-school relations	30
Attendance	27
Career planning/counseling	24
Drop-out programs	20
Parent participation	19
Postsecondary planning	16
Health and related services	15

The Part A Grants to LEAs program is current funded. Grants are made later in the fiscal year, and program activities are usually carried out primarily during the next fiscal year.

1987 Budget Policy

The Department is proposing new legislation for Indian education to (1) direct the funds to Indian children who are in greatest need of services; (2) involve State educational agencies in programs for Indian children in public schools; and (3) develop a more unified and less duplicative program for educating Indian children, by dividing responsibility for public schools and BIA-schools appropriately between the Department of Education and the Bureau of Indian Affairs.

This legislative proposal is intended to improve service to Indian children in both public schools and BIA schools. The proposal is based on the concept that limited Federal funds should be used for the Indian children who are in need of special aid and on activities that address basic educational needs. When the Department of Education program began, in 1972, it appeared that most Indian children needed aid. Today, the Indian population remains disadvantaged, but has made significant educational gains. Indian children are no longer the most disadvantaged ethnic group, and many Indian children are succeeding in school. In order to allocate Federal funds more efficiently, the State grant program will target aid on educationally disadvantaged Indian children.

The legislation also proposes to provide grants to SEAs, rather than directly to LEAs. Most Indian children are in public schools (82 percent), not BIA and Indian-controlled schools (11 percent) or private schools (7 percent). It is important that States take full responsibility for the Indian children in public schools and that the Indian community build communication links with SEAs.

A number of States already have special units, policies, or funding for Indian programs. A national survey in 1981 indicated a willingness and even eagerness on the part of many SEAs in States with significant numbers of Indians to administer the Department of Education's program for Indian children.

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1987 Budget Policy (continued)

Under the proposed legislation, the Department of Education would fund elementary and secondary education for Indians in public schools and BIA would fund its own BIA schools and the Indian-controlled schools.

Duplication of programs between the Department of Education's Indian Education Act and the Department of Interior's Bureau of Indian Affairs is extensive under the current legislation. Many Indian children can bring in funds from both Departments. At present, more than 90 percent of children who receive BIA's Johnson O'Malley services are in districts that also get Part A funding. All children who receive Johnson O'Malley funding are eligible for Part A assistance as well, if their school districts apply for the funds. In districts which have both programs, the LEA usually tries to coordinate the programs so that duplicate services are not provided, but this does not eliminate the inefficiency of operating two almost identical programs for the same children.

The Department of Education budget for the State grant program is $70,323,000, an amount approximately the same as the total previously appropriated for the Part A Grants to LEAs program, two Part B programs, and BIA's Johnson-O'Malley program. Similarly, BIA's budget has been increased by an amount about the same as that appropriated for the Part A Indian-Controlled Schools program and several Part B discretionary programs that provide aid to Indian tribes and BIA schools. This essentially maintains the levels of funding spent for affected programs in the two agencies at the 1986 pre-sequestration level while directing it in a more efficient manner to improve services for the children.

At this level of funding, it is estimated that about 1,280 school districts in 42 States would participate in the program. About 347,000 Indian children would be eligible to participate, and around 257,000 would receive services under the program. Average Federal share per child would be $275 per child.

Indian-Controlled Schools Program

Purpose and Method of Operation

The Part A Indian-Controlled Schools program is authorized by a set-aside of up to 10 percent of the amount appropriated for the Part A formula program. Tribes and Indian organizations that operate schools on or near reservations may compete for funds: (1) to start a school or (2) to develop special enrichment programs that supplement an already established program. All schools are supposed to be on or near a reservation.

In 1985, 30 Indian schools, 90 percent of which were BIA-contract schools, received grants under this program.

Most Indian schools receive aid under a variety of other BIA and Department of Education sources. In 1984, total aid from both agencies was at least $44.6 million for Indian schools, of which BIA-contract schools received $42.1 million. While the BIA appropriation was intended to provide full operating support for BIA-contract schools, the Department of Education provided as much as 32 percent of the total Federal funds for BIA-contract schools.

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Purpose and Method of Operation (continued)

In addition to aid from the Indian Education Act, additional funds are provided through automatic transfers to BIA from Chapter 1 and Education for the Handicapped State Grants, and many discretionary awards from Bilingual Education.

Because of all of this aid, BIA contract schools have very high per pupil revenues ($4,370) -- 42 percent above the national average. In 1984, 18 of the 72 Indian schools funded from either BIA, ED, or both, had average per pupil expenditures from $5,000 to $11,000 per child, because of combined Federal aid. Further, the Department's analysis is probably low. A recent evaluation of Indian-controlled schools (Abt Associates, Inc., 1985) found even higher average per pupil expenditures at the schools -- $6,890, compared to $3,505 in comparable public schools located nearby. The average per pupil expenditure in BIA day schools, excluding boarding schools, is only about $3,800.

Results from the Abt study also found that student performance in the Indian-controlled schools was lower than average, that student attendance was lower than in comparable public schools, and that student withdrawal rates were very high. Pupil-instructional staff ratios were very low (7 to 1) compared to comparable local public schools (16 to 1). Overall, the study found that some of the schools were providing an education comparable to public schools or BIA-operated schools, but some were definitely not. The schools vary greatly in student achievement and attendance.

From this study, it appears that a number of Indian-controlled schools need special aid and technical assistance, or simply may be too small for efficient operation. Others can match or exceed achievement in public schools and should stand as models for Indian and public schools.

1987 Budget Policy

Because of the need to reduce the inequity in funding between Indian children in BIA-operated schools and public schools and those in the BIA-contract schools, and because of the need to improve efficiency of the schools' operations, it is important to reduce the multiple, uncoordinated sources of funding for Indian-controlled schools and to designate one agency as responsible for providing primary aid to these schools. The Department of Education's legislative proposal for Indian education will not include authority for support of Indian-controlled schools. The schools will continue to receive both basic and supplementary funding from the Bureau of Indian Affairs. This will enable the BIA to coordinate aid and provide technical assistance to meet the needs of each school.

The BIA budget for 1987 has been increased by an amount approximately the same as the 1986 enacted level of funding for the Part A Indian-Controlled Schools program and the funding for the Part B projects for Indian children, which served a number of these schools and many Federally-recognized Indian children.

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1987 Budget Policy (continued)

BIA plans to use these funds for a new program of grants for enrichment programs in the BIA contract and operated schools. The same types of activities in these schools that are currently funded through Part A and Part B of the Indian Education Act could be funded.

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GRANTS FOR INDIAN CHILDREN

	1985 Actual	1986 Appropriation	1986 after Sequestering 1/	1987 Estimate
Appropriation	$45,913,000	$45,637,000	$43,675,000	$70,323,000
State grant program				
Number of applications..	—	—	—	42
School districts participating.....	—	—	—	1,280
Children eligible.....	—	—	—	347,000
Children served.....	—	—	—	257,000
Average award to LEAs...	—	—	—	$52,000
Average award to SEAs...	—	—	—	$84,000
Federal share per child served.....	—	—	—	$275
Amount obligated.....	—	—	—	$70,323,000
Part A Grants to LEAs				
Number of applications:				
School districts.....	1,089	1,089	1,089	—
BIA-contract schools..	55	55	55	—
Total.....	1,144	1,144	1,144	—
Number of awards:				
School districts.....	1,076	1,076	1,076	—
BIA-contract schools..	55	55	55	—
Total.....	1,131	1,131	1,131	—
Number of States in which awards are made:				
School districts.....	42	42	42	—
BIA-contract schools..	17	17	17	—
No. of eligible children:				
School districts.....	319,271	319,271	319,271	—
BIA-contract schools..	10,227	10,227	10,227	—
Total.....	329,498	329,498	329,498	—
Children actually served:	244,000	244,000	244,000	—
Average award.....	$40,586	$40,351	$38,616	—
Federal share per child.	$139	$139	$133	—
Amount obligated:				
School districts.....	44,629,865	44,372,000	42,465,000	—
BIA-contract schools..	1,273,158	1,265,000	1,210,000	—
Total.....	$45,903,023	$45,637,000	$43,675,000	—

1/ Reflects a reduction of $1,962,000 pursuant to the Balanced Budget and Emergency Deficit Control Act of 1985, P.L. 99-177.

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PART A INDIAN-CONTROLLED SCHOOLS

	1985 Actual	1986 Appropriation	1986 after Sequestering 1/	1987 Estimate
Appropriation	$4,410,000	$4,384,000	$4,195,000	---
No. of applications.....	65	65	65	---
No. of awards.....	34	34	34	---
No. of students served..	5,890	5,850	5,850	---
Average award.....	$129,691	$128,941	$123,382	---
Federal share per student.....	$749	$749	$717	---
Amount obligated.....	$4,409,486	$4,384,000	$4,195,000	---
Percent of Part A Grants to LEAs program.....	8.8%	8.8%	8.8%	---

1/ Reflects a reduction of $189,000 pursuant to the Balanced Budget and Emergency Deficit Control Act of 1985, P.L. 99-177.

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PART A - GRANTS TO LEAS

FY 1985 Grants

State	Number of Grants	Amount
Alabama	9	$740,126
Alaska	46	6,797,853
Arizona	65	3,968,167
Arkansas	2	132,770
California	132	3,822,051
Colorado	6	212,666
Connecticut	2	26,284
Florida	6	80,125
Hawaii	1	12,140
Idaho	12	194,841
Illinois	2	122,821
Indiana	2	8,401
Iowa	4	98,050
Kansas	8	200,192
Louisiana	6	322,588
Maine	4	42,659
Maryland	6	156,636
Massachusetts	2	71,593
Michigan	84	2,039,810
Minnesota	53	1,538,241
Mississippi	4	10,481
Missouri	1	2,974
Montana	39	1,630,454
Nebraska	9	266,534
Nevada	12	328,438
New Jersey	3	60,261
New Mexico	28	3,468,250
New York	17	1,006,886
North Carolina	24	1,628,210
North Dakota	21	627,292
Ohio	3	96,017
Oklahoma	317	9,658,726
Oregon	22	810,311
Rhode Island	2	27,236
South Dakota	34	1,334,056
Texas	3	109,920
Utah	15	495,865
Vermont	1	57,730
Virginia	2	16,837
Washington	76	2,334,972
Wisconsin	40	1,006,848
Wyoming	6	296,711
Totals	1,131	$45,903,023

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PART A - INDIAN-CONTROLLED SCHOOLS

FY 1985 Grants

States	Number of Grants	Amount
Alaska	1	$67,760
Arizona	3	446,273
Florida	2	181,836
Idaho	1	102,640
Iowa	1	37,062
Kansas	1	96,085
Maine	1	57,555
Minnesota	6	934,364
Montana	2	327,410
Nevada	1	177,656
New Mexico	1	106,563
North Dakota	3	356,753
South Dakota	8	1,169,309
Washington	2	162,384
Wisconsin	1	79,289
Total	34	4,302,939 1/

1/ Excludes $107,061 contingently obligated per court order and adjustments.

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ITEMIZATION OF ESTIMATE

Grants for Indian Children

	1985 Amount Available	1986 Available after Sequestering	1987 Estimate	Increase or Decrease
41 Grants, subsidies and contributions	$50,323,000 1/	$47,870,000	$70,323,000	+$22,453,000
Net obligations	50,323,000 1/	47,870,000	70,323,000	+22,453,000

1/ Includes $10,491 contingently obligated under court order.

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2. ADULT EDUCATION

	1985 Appropriation	1986 Appropriation	1986 Available after Sequestering	1987 Estimate
Adult education.	$2,940,000	$2,922,000	$2,797,000	$2,940,000 1/

1/ Request based on proposed legislation.

Purpose and Method of Operation

The Indian adult education program provides grants to support programs of adult education to enable Indian adults to acquire basic literacy, complete secondary school, or secure training and education to become more employable and productive citizens. Many projects also offer consumer education and other special services such as academic and career counseling, aptitude and vocational testing, and job referral.

Discretionary grants are made, on a competitive basis, to Indian tribes and organizations, State and local educational agencies, and higher education institutions. Most grants are awarded to Indian organizations and tribes. Funds appropriated and awarded in one fiscal year are generally used for activities during the next fiscal year.

Most of the Indian adult education projects that have been funded since 1974 have been service projects, although some were labeled demonstration projects. An evaluation study of the program (Pelavin Associates, 1985) found that there has been little diffusion or adaptation of products from the few true demonstration projects and curriculum development projects that have been funded.

Indian population: The total Indian population which needs adult education is sizable and is concentrated more in rural than in urban areas. About 411,000 adult Indians have not graduated from high school. Many are illiterate. About 60,000 of those aged 25 and older have had less than a 5th grade education.

The Indian adult population has made considerable progress. From 1960 to 1980, the percentage of Indians age 25 and older with less than a 5th grade education went from 22 percent to 8 percent. For the U.S. as a whole, the percentage went from 8 percent to 4 percent. Many more Indians are high school graduates. From 1960 to 1980, the population of Indians age 25 and and older with a high school diploma went from 18 percent to 56 percent. Comparable percentages for the U.S. as a whole were 41 percent to 67 percent.

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Purpose and Method of Operation (continued)

FY 1985 activities: During 1985, 12 grants were awarded to provide educational services to more than 4,560 Indian adults. Awards were made to six tribes, three Indian organizations, one local educational agency, and two Indian urban centers. Four of the awards went to grantees in urban areas and eight to grantees in reservation or rural areas.

In 1985, pilot, planning, and demonstration project awards were made to 16 projects serving about 5,000 Indian adults. The awards were to five Indian tribes, three Indian organizations, one Indian community college, one Indian foundation, three institutions of higher education, and three Indian urban centers. Nine of the projects were in urban settings, and seven were rural or reservation based.

Other programs serving adult Indians: All Indian adults are also eligible to participate in the State-administered adult education program authorized by the Adult Education Act, and for many Indians, BIA-funded adult education programs are also available. In 1985, it is estimated that about $1 million was used to serve 26,500 Indian adults under the Adult Education Act and that 13,520 adults were served under the BIA adult education program funded at $3,474,000.

New legislation: The proposed legislation would continue the service projects funded under the current Indian adult education program, while eliminating specific authorities for planning, pilot, and demonstration projects; research; surveys; and information dissemination. All current types of projects could be funded under the new legislation.

1987 Budget Policy

Funding is requested for this small program of adult education for Indians at approximately the same level as in 1986 and several prior years. The need for adult education in the Indian community remains great. Adult Indians have traditionally been among the most disadvantaged minority populations in America. In recent years, educational attainment of adult Indians has improved considerably but still remains considerably lower than for the non-minority American population.

The program will concentrate on providing educational services to adult Indians and will maintain its emphasis on adult basic education and preparation for the G.E.D. Most of the projects are already concentrating on services, no matter what their title. Also, to the extent that demonstration projects are somewhat more expensive and have limited applicability, concentrating on educational service projects is a more cost effective use of the funds. The new legislation will not contain explicit authority for planning and demonstration projects, although innovative activities can certainly be funded under a service project. Thus, little change is expected in the basic operation of the program under the new legislation. No increases are sought, because this is only one of a number of sources of funding for programs which serve adult Indians.

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ADULT EDUCATION

	1985 Actual	1986 Appropriation	1986 Available after Sequestering	1987 Estimate
Appropriation	$2,940,000	$2,922,000	$2,797,000	$2,940,000
Educational services	$1,176,000	$1,169,000	$1,119,000	$2,940,000
No. of applications	90	90	90	130
No. of awards	12	12	11	28
Average award	$98,000	$97,416	$101,727	$105,000
Adults participating	4,562	4,500	4,300	9,550
Planning, pilot, and demonstration projects	$1,764,000	$1,753,000	$1,678,000	---
No. of applications	37	40	40	---
No. of awards	16	16	16	---
Average award	$110,250	$109,562	$104,875	---
Adults participating	5,000	5,000	4,800	---
Total				
Obligations	$2,940,000	$2,922,000	$2,797,000	$2,940,000
No. of applications	127	130	130	130
No. of awards	28	28	27	28
No. of participants	9,562	9,500	9,100	9,550

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PART C SPECIAL PROJECTS FOR INDIAN ADULTS

FY 1985 Grant Awards, by State

State	Number of Grants	Total Funds
Arizona	1	$10,109
Colorado	1	158,015
Illinois	1	66,168
Massachusetts	3	319,378
Michigan	3	267,643
Minnesota	3	409,678
Mississippi	1	249,758
Montana	3	339,047
New Mexico	1	162,689
New York	1	91,002
Oklahoma	1	121,984
Oregon	1	120,502
South Dakota	2	108,648
Washington	6	515,379
TOTALS	28	2,940,000

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ITEMIZATION OF ESTIMATE

Special Programs for Indian Adults

	1985 Amount Available	1986 available after Sequestering	1987 Estimate	Increase or Decrease
41 Grants, subsidies and contributions	$2,940,000	$2,797,000	$2,940,000	+$143,000
Net obligations	2,940,000	2,797,000	2,940,000	+$143,000

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3. SPECIAL PROGRAMS FOR INDIAN STUDENTS

	1985 Appropriation	1986 Appropriation	1986 Available after Sequestering	1987 Estimate
Special programs for Indian children.....	$11,760,000	$11,809,000	$11,301,000	----

Purpose and Method of Operation

Part B authorizes a variety of discretionary programs designed to improve the quality of educational programs for Indians:

- Projects for Indian children: Discretionary grants are made for planning, pilot, and demonstration projects and educational service projects to improve the quality of educational programs for Indian children. Funding is used for a variety of educational programs such as preschool, dropout prevention, gifted and talented, tutoring, Indian cultural heritage programs, career/vocational education, and curriculum development.

  Projects are usually funded for one year. All grantees are Indian tribes and organizations. About 34 percent of the funds were provided to Indian-controlled schools in FY 1985. Almost all of the funds have been used for federally-recognized Indians. About 27 percent were used for urban Indians in 1985.

- Educational personnel development: Discretionary grants are made to universities and to Indian tribes and organizations to train Indians for careers in teaching or educational administration. There are two programs funded in this area: one which primarily funds universities for graduate programs in education; and one which primarily funds Indian tribes which in turn usually subcontract with a local university or college for undergraduate programs to train teacher aides and teachers.

  Both programs have contributed a significant number of Indian teachers, counselors, and principals to public school districts, BIA schools, and national Indian organizations. Administrative costs of the two programs are very high, with averages of 43 percent and 29 percent, respectively, being spent on administration and coordination.

- Fellowships are awarded to Indian students in the fields of medicine, psychology, law, education, business administration, engineering, and natural resources. Awards are based on academic record, leadership potential, and commitment. Priority is given to applicants in certain graduate fields.

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Purpose and Method of Operation (continued)

In the past two years, about 75 percent of the fellowships went to federally-recognized Indians, the same group served by BIA fellowships. In 1985, fellowship awards ranged from $140 to $28,450; 89 awards were for undergraduate fellowships and 132 for graduate fellowships.

- Resource and Evaluation Centers provide technical assistance and disseminate information to Indian education projects and applicants. Center staff conduct workshops, make site visits to provide technical assistance, and prepare and distribute printed materials.

All Part B programs are discretionary; that is, awards are made based on competition among applicants. The applications are reviewed by panels of outside field readers and agency program specialists and are evaluated based on criteria specified in regulations. Most awards are made for one year projects. Funds appropriated and awarded in one fiscal year are generally used for activities that take place during the next fiscal year.

1987 Budget Policy

The authority for Part B Special Programs for Indian Students is being repealed by the new legislative proposal, and the programs authorized are not being continued under other legislation. The programs currently supported are duplicative of other Department of Education and BIA activities or inefficiently serve a small number of Indians, with little long-range impact.

For 1987, the BIA budget has been increased by $11.5 million to fund special educational activities. This amount essentially represents the decrease in the Department of Education's budget for Part A Indian-controlled schools programs and Part B programs for children and fellowships. The intent is to maintain most of the funding spent on Indians at the 1986 level but redirect it to programs of higher priority and greater efficiency.

The increase for BIA would be used to fund more fellowships and to start a new program of grants for enrichment programs in the BIA-operated and BIA-contract schools.

Specific reasons why the Part B programs should not be funded include:

- Special projects for Indian children -- These projects duplicate Head Start activities, the existing Part A Grants to LEAs and Indian-Controlled Schools program, and the proposed State grant and BIA enrichment programs. Many of the awards go to Indian-controlled schools. Almost all are for federally-recognized Indian children.

- Educational personnel development projects carry high administrative costs, and the students they serve can receive Pell Grants and Guaranteed Student Loans. Many students are eligible for higher education grants and fellowships from BIA. Indians can also participate in programs supported under the new Teacher Training Initiative proposed by the

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1987 Budget Policy (continued)

Department. Not only is there a small set-aside for BIA in the initiative, but Indian teachers and Indian organizations would be eligible to participate in the programs offered through the State grant programs also.

- The fellowship program duplicates Pell Grants, the Guaranteed Student Loan Program, and aid for health professionals from the Department of Health and Human Services. In addition, federally-recognized Indians from reservations can get BIA fellowships for the same categories. Because so many students are eligible for BIA fellowships, considerable coordination is required between ED and BIA each year to assure that students do not receive excess aid under both programs.

- Resource and evaluation centers — With the new legislation, SEAs will have funding and authority to provide technical assistance and monitoring for local Indian education projects. Direct Federal contracts with centers will not be needed.

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SPECIAL PROGRAMS FOR INDIAN STUDENTS

	1985 Actual	1986 Appropriation	1986 after Sequestering	1987 1/ Estimate
Appropriation	$11,760,000	$11,809,000	$11,301,000	—
Planning, pilot, and demonstration (Section 1005(b))	$2,450,000	$2,435,000	$2,330,000	—
No. of applications..	67	67	67	—
No. of awards.....	24	24	23	—
Average award.....	$102,083	$101,458	$101,304	—
Participants.....	6,000	5,800	5,800	—
Educational services (Section 1005(c))	$3,430,000	$3,410,000	$3,263,000	—
No. of applications..	110	110	110	—
No. of awards.....	32	32	31	—
Average award.....	$107,188	$106,562	$105,258	—
Participants.....	11,757	11,700	11,200	—
Educational personnel development (Section 1005(d))	$1,176,000	$1,169,000	$1,119,000	—
No. of applications..	28	28	28	—
No. of awards.....	6	6	6	—
Average grant award..	$196,000	$194,833	$186,500	—
Participants.....	123	122	117	—
Federal share per student.....	$9,560	$9,560	$9,560	—
Educational personnel development (Section 422)	$980,000	$1,093,000	$1,046,000	—
No. of applications..	24	24	24	—
No. of awards.....	9	10	9	—
Average grant award..	$108,889	$109,300	$116,200	—
Participants.....	600	670	640	—
Federal share per student.....	$1,633	$1,633	$1,633	—

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SPECIAL PROGRAMS FOR INDIAN STUDENTS
(continued)

	1985 Actual	1986 Appropriation	1986 after Sequestering	1987 1/ Estimate
Fellowships (Section 423)	$1,470,000	$1,461,000	$1,398,000	—
No. of applications..	825	825	825	—
No. of awards.....	221	220	210	—
Average award.....	$6,651	$6,651	$6,651	—
Resource and Evaluation Centers (Section 1005(a))	$2,254,000	$2,241,000	$2,145,000	—
No. of centers.....	5	5	5	—
Average contract.....	$450,000	$448,200	$429,000	—
Total				
Obligations.....	$11,760,000 1/	$11,809,000	$11,301,000	—
Applications for grants.....	234	234	234	—
Grant awards.....	76	77	74	—
Applications for fellowships.....	825	825	825	—
Fellowship awards...	221	220	210	—
No. of students served.....	17,757	17,500	17,000	—
No. of educational personnel trained.	723	793	737	—

1/ Includes $86,529 contingently obligated under court order.

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SPECIAL PROGRAMS FOR INDIAN STUDENTS

FY 1985 Grant Awards by State

State	Number of Grants	Total Funds
Alaska	6	$584,331
Arizona	4	632,976
California	1	194,512
Idaho	1	77,238
Louisiana	1	32,400
Massachusetts	2	338,870
Michigan	1	100,139
Minnesota	4	512,499
Mississippi	2	347,764
Montana	4	510,560
Nevada	1	71,145
New Mexico	7	768,117
New York	1	115,995
North Carolina	2	390,707
North Dakota	3	223,505
Oklahoma	5	587,955
Pennsylvania	1	241,195
South Dakota	7	505,523
Utah	4	390,882
Washington	9	911,345
Wisconsin	5	500,342
TOTALS	71	8,036,000

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PART B INDIAN FELLOWSHIP PROGRAM

FY 1985 Awards by State

State	Number of Fellowships	Total Funds
Alaska	3	$15,128
Arizona	5	29,776
California	18	135,687
Colorado	6	30,770
Connecticut	1	11,300
District of Columbia	5	54,410
Florida	4	27,844
Georgia	3	17,557
Idaho	1	3,230
Illinois	1	19,911
Kansas	3	13,113
Massachusetts	15	185,530
Michigan	5	45,563
Minnesota	3	26,379
Missouri	2	51,612
Montana	5	22,827
Nebraska	2	18,292
Nevada	1	11,820
New Hampshire	2	7,201
New Mexico	11	52,356
New York	11	68,846
North Carolina	35	110,747
North Dakota	4	26,644
Oklahoma	28	118,357
Oregon	5	23,086
Pennsylvania	7	108,232
South Dakota	2	4,684
Tennessee	1	1,823
Texas	5	23,725
Utah	2	10,757
Virginia	2	8,847
Washington	15	64,137
Wisconsin	8	33,280
Totals	221	1,383,471 1/

1/ Excludes an amount of $86,529 contingently obligated under court order.

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4. PROGRAM ADMINISTRATION

	1985 Appropriation	1986 Appropriation after Sequester	1987 Estimate
Program Administration	$2,381,000	$2,219,000	$2,466,000

	Change from Base
Increases	
Permanent Compensation	$67,000
Benefits	3,000
Travel	33,000
Rent, Communications, and Utilities	79,000
Other Services	62,000
Printing	3,000
Net Change	+247,000

Purpose and Method of Operation

Program Administration funds are used for staffing, travel, and other administrative expenses of the Office of Indian Education and the National Advisory Council on Indian Education. They are also used for planning and evaluation studies to provide information for policy decisions and program improvement.

The Office of Indian Education administers programs funded under the Indian Education Act. Funds are used for salaries and benefits; travel costs to monitor grant and contract awards, to provide technical assistance, and to conduct program audits of Part A projects; printing; rent, communications, and utilities; supplies and equipment; field readers; and automatic data processing services.

The National Advisory Council on Indian Education consists of 15 members, who are Indians or Alaska Natives and are appointed by the President. The Council is mandated by Section 446(a) of the General Education Provisions Act to meet twice a year. The Council usually meets near Indian populated areas to encourage participation by the Indian community. The purposes of the Council, as set forth in Section 442 of the Indian Education Act, are to: advise the Secretary of Education with respect to administration of any program in which Indian children or adult participate or from which they can benefit; review applications for assistance submitted under the Indian Education Act; evaluate programs and projects in which Indians participate and disseminate the results; provide technical assistance; assist the Secretary in developing regulations; and submit to the Congress an annual report of its activities and recommendations.

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Purpose and Method of Operation (continued)

Proposed legislation to amend the Indian Education Act would modify the Indian education program and indirectly change some functions. The National Advisory Council would continue to advise the Secretary with regard to Federal programs benefiting Indian children and adults, evaluate programs and projects carried out under any program of the Department in which Indian children or adults can participate or benefit, and submit to the Congress a report on its activities for the year. The Council would not perform functions unusual for advisory councils, such as providing technical assistance, providing advice on non-Federal programs, or reviewing grant applications.

1987 Budget Policy

For fiscal year 1987, $2,180,000 is requested for the salaries and expenses of the Office of Indian Education. This is $173,000 more than the 1986 budget after sequestering. The increase from the 1986 level is primarily due to projected increases in the costs of personnel, rent, communications, and utilities. Additionally, contracts and data processing services, curtailed in 1986, have been increased. The increase in travel is due to the changes in direct grant programs and the need to close out the old programs and to provide technical assistance and support for the initial phase in of the new program. The present staffing level will be required in order to develop regulations and start up the new programs, and close out grants and audit reports under the old programs. The funding and full time equivalent (FTE) staffing levels will be reduced in future years to reflect administrative savings resulting from the proposed legislative changes.

For the Advisory Council, $286,000 to cover administrative costs is requested, an increase of $74,000 from the 1986 level after sequestering. The requested increase is to cover rent, communications, and utilities which NACIE had not been required to pay in the past. These costs were covered by the Department's management account for other programs and were not charged to Indian education program administration. Beginning in 1987, the Department is requesting $48,000 to cover these costs. The additional $26,000 is requested to cover travel, consultants, printing and other services which will be required to implement the proposed changes in the Indian education programs.

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INDIAN EDUCATION

Personnel Summary

	1985	1986	1987
Total number of permanent positions	48	48	48
(Office of Indian Education)	(44)	(44)	(44)
(National Advisory Council on Indian Education)	(4)	(4)	(4)
Total compensable work years:			
Full-time equivalent employment	49	48	49
(Office of Indian Education)	(45)	(44)	(45)
(National Advisory Council on Indian Education)	(4)	(4)	(4)
Full-time equivalent of overtime and holiday hours	(0)	(0)	(0)
Average ES salary	$69,990	$70,300	$68,700
Average GS grade	10.1	9.3	8.9
Average GS salary	$31,335	$30,883	$32,143

Detail of Permanent Positions

	1985	1986	1987
Ungraded Position	1	1	1
ES-4	1	1	1
GS-15	1	1	1
GS-14	0	0	0
GS-13	4	5	5
GS-12	22	20	15
GS-11	3	4	5
GS-9	1	1	2
GS-8	2	1	1
GS-7	0	1	3
GS-6	1	1	1
GS-5	8	8	9
GS-4	1	1	2
GS-3	2	2	1
GS-2	1	1	1
Total	48	48	48

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ITEMIZATION OF ESTIMATE
Program Administration
Office of Indian Education
and
National Advisory Council on Indian Education

(Dollars in Thousands)

	1985 Actual	1986 Available after Sequestering	1987 Estimate	Increase or Decrease
11 Personnel compensation.....	$1,612	$1,575	$1,642	+$67
12 Personnel benefits.....	171	174	177	+3
21 Travel and transportation of persons...	163	130	163	+33
22 Transportation of things.....	---	---	---	---
23 Rent, communications, and utilities.....	210	202	281	+79
24 Printing and reproduction.....	10	14	17	+3
25 Other services.....	206	114	176	+62
26 Supplies and materials.....	9	10	10	---
31 Equipment.....	---	---	---	---
Net obligations	2,381 1/	2,219	2,466	+247

1/ The total obligations at the end of fiscal year 1985 included $19,370 contingently obligated under court order.

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NAVAJO AND HOPI INDIAN RELOCATION COMMISSION

FISCAL YEAR 1987

CONGRESSIONAL BUDGET SUBMISSION

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NAVAJO AND HOPI INDIAN RELOCATION COMMISSION

FISCAL YEAR 1987

APPROPRIATION SUMMARY STATEMENT

The Commission budget request for fiscal year 1987 is $22,335,000. This represents a total increase of $615,000 over the previous year. The resources requested will support the operation of the Commission, Incentive Bonus Payments, Housing Acquisition and Construction, and Discretionary Funding to facilitate and expedite resettlement activities. This level of funding does not provide for any new lands development.

Component elements of the Budget Proposal include:

- Operation of the Commission $3,150,000

  a. Expenses of the Commissioners
  b. Executive Direction
  c. Advisory Assistance Services
  d. Housing Acquisition and Site Development
  e. Administration, Finance and New Lands Management and Coordination

- Incentive Bonus Payments 2,185,000

- Relocation Payments (Housing) 15,000,000

- Discretionary Funds 2,000,000

Consistent with the provisions of P.L. 93-531 and its associated Amendments Act of 1980, P.L. 96-305, the Commission will continue efforts towards the final settlement of the long standing dispute between the Navajo and Hopi Indian Tribes.

Operation of the Commission

Long Range Goal: Assure that all relocation-resettlement activities conducted by the Commission are consistent with the intent of Congress and the Executive Branch as expressed by P.L. 93-531, and the Navajo and Hopi Indian Relocation Amendments Act of 1980, P.L. 96-305. This includes the planning of adequate infrastructure in conjunction with BIA and IHS on the new lands to support the resettlement of families to that location. Actual construction will be accomplished by the BIA and IHS. This goal is essential to completion of the Commission's mandated responsibilities.

Major Objectives:

1. Conduct monthly public Commission Meetings and support various other activities of the Members of the Commission, as necessary, to insure the

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proper review and oversight of the Navajo and Hopi Indian Relocation Commission.

2. Maintain an effective management structure for the direction, implementation, and management of Commission policy by agency staff.

3. Provide necessary research and evaluation of ongoing and new program proposals for dissemination by agency management.

4. Maintain an effective program of federal and legislative coordination to insure that the necessary resources from appropriate federal participants are included in the overall relocation implementation efforts.

5. Provide ongoing engineering and technical support to relocation planning and implementation activities.

6. Conduct a comprehensive program of Relocation Operations and Advisory Assistance Services for Navajo and Hopi families participating in resettlement activities. This will include necessary family counseling assistance, the payment of incentive bonuses, the acquisition of decent, safe, and sanitary replacement housing, the disposal of abandoned property and improvements on the former Joint Use Area, and various other activities necessarily associated with relocation-resettlement.

7. Conduct a comprehensive program of resale dwelling and new construction building inspections. Through ongoing inspections, decent, safe, and sanitary housing for relocatee families shall be provided within the prevailing benefit ranges.

8. Conduct planning and evaluation programs directed towards determining the feasibility of involving the private business sector in developing workable commercial alternatives for lands acquired for occupancy by relocatee families.

9. Utilize discretionary funding assistance for projects designed to facilitate and expedite relocation efforts through practical land usage alternatives.

10. Conduct administrative and financial management programs in support of all agency activities.

11. Reduce per move cost through group moves, multiple contracts, standardized plans, etc.

12. Continue to support and facilitate meaningful land exchange negotiations through technical assistance provided to the Tribe.

Current Method of Accomplishing Program Objectives

The Commission has operated a program of relocation operations and advisory services since 1977. 945 Navajo and Hopi Indian families were

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voluntarily resettled from the former Joint Use Area through the end of FY 1985. During 1986, it is estimated that an additional 170-180 families will relocate.

During FY 1986 and FY 1987, the Commission will maintain a planning program with the Navajo and Hopi Tribes to develop multifaceted land usage alternatives for available sites. The actual involvement of relocatees in this effort will be a key factor in its implementation.

Discretionary Funds will be used by the Commission to assist both Tribes in meeting and reducing the burdens imposed by this Act.

Program Accomplishments:

During fiscal year 1985, the following tasks were accomplished:

- 178 Navajo families were relocated from the Hopi Partitioned Lands. No Hopi families relocated from Navajo Partitioned Lands during fiscal 1985.
- 10 Navajo families who were evicted from District Six as a consequence of the decision in the case of the United States vs Kabinto, 1972 received benefits as provided for in Public Law 96-305.
- 632 Navajo and Hopi families were certified as eligible for agency assistance.
- 1,363 Navajo and Hopi families were denied eligibility for agency assistance.
- 3 Navajo families who applied for benefits as District Six evictees were denied eligibility for agency assistance.
- 199 on-reservation homesite leases were approved and received from the Navajo Tribe.
- 1,143 inspections were performed on replacement homes, in various stages of completion.
- Dwellings and improvements at 72 homesites on the former Joint Use Area were acquired and disposed of.
- As of the end of fiscal 1985, a total of 593 cases were closed because of the end of the 2 year post-move follow-up period. Post-move counseling had an active caseload of 281 cases.

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During fiscal year 1986, the following goals are projected:

- 170 Navajo and Hopi families will relocate for a program total of 1,115.
- On-reservation group move projects will be continued and completed in cooperation with the Navajo Tribe. Approximately 80 families will be relocated under this concept.
- Planning and development of new lands will continue to be a high priority supported by significant contractor and staff resources.
- New planning efforts will be initiated to assess the impacts of on-reservation relocation and to identify mitigating measures.
- Conducting administrative hearings on eligibility denials for approximately 200 of the 556 pending appeals.
- Completion of eligibility determinations on all pending applications for relocation assistance within 60 days of July 7, 1986, the deadline for receipt of applications.

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Resource Requirements : (Dollars in thousands)

	FY 1985 Actual	FY 1986 Approp Enacted	(.6%) Reduction FY 1986 Reduction	FY 1985 Carryover	FY 1986 Sequestered Amount	FY 1986 Base	FY 1987 Estimate	Change to Base
Operation of Commission	3,018	3,258	[20]	212	[139]	3,311	3,150	-161
Relocation Payments (housing)	14,933	14,760	[88]	89	[634]	14,127	15,000	+873
Assistance Payments (bonus)	1,049	995	[6]	11	[39]	961	2,185	+1,224
Discretionary Funds	1,632	3,478	[21]	13	[149]	3,321	2,000	-1,321
Total	20,632	22,491	[135]	325	[961]	21,720	22,335	615

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Program Objectives:

To provide effective relocation assistance to families subject to resettlement as a result of partition. To assist in the planning for the use of new lands made available for resettlement purposes. To coordinate activities with other federal participants. To utilize Commission resources to mitigate the impacts of relocation through sound economic development planning.

Output/Workload Measures: Function	Actual FY 1985	Estimated FY 1986	Estimated FY 1987
1. Final Certification Advisements	1,998	50	-0-
2. Eligibility Appeals	70	500	-0-
3. Certified Upon Appeals	-0-	50	75
4. Pre-move Counseling Sessions	279	750	750
5. Case Status Inquiries (Clients)	1,400	1,500	2,000
6. Post-move Home Visitations (Field)	76	100	250
7. Post-Move Office & Telephone Contacts	43	100	100
8. Housing Acquisition Counseling Sessions	392	400	400
9. Housing Acquisition Negotiations-Realty	188	210	210
10. Homesite Leases Acquired	199	150	150
11. Realty Acquisition Status Inquiries	564	510	630
12. Final Appraisals (Field)	21	100	-0-
13. Properties Acquired, Secured, Disposed (Field)	159	100	100
14. Homesite Feasibility Studies (Field)	155	150	150
15. Replacement Home Inspections	1,048	947	1,170
16. Home Warranty Inspections	39	50	50
17. Home Appeals Inspections	96	80	-0-
18. Review of Proposed Construction Plans	184	166	206
19. Total Families Relocated	188	170	210

Program Objectives for Proposed Funding Level

1. The Commission, during fiscal 1987, plans to resettle approximately 210 Navajo and Hopi families awaiting relocation.

2. Significant efforts will be made to continue planning activities on the new lands. As a result of Public Law 99-190, BIA will be constructing homes on the new lands and IHS will construct domestic water and sanitation systems. The Commission will be working jointly with BIA and IHS to initiate necessary development on the new lands.

3. Relocatee families will be contacted individually to give them additional information on the new lands and to request them to choose a relocation site.

4. Regulations will be prepared for the administration of these new lands, in cooperation with the Navajo Tribe.

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5. The Commission will continue to work closely with various other federal agencies with statutory responsibility for provision of services to Indian communities. The Commission will continue to coordinate planning efforts with these agencies so that these services will be made available to the relocatees on the new lands as well as on existing reservation sites.

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Summary of Requirements by Object Class
(dollar amount in thousands)

Appropriation: Salaries and Expenses and Special Funds	FY 1986 Approp Enacted	FY 1986 Sequestered Amount	FY 1986 Base 1/	FY 1987 Request	Change to Base
11.1 Full-time permanent positions	1,680	-68	1,612	1,800	+188
11.3 Other than full-time permanent					
11.8 Special personnel services payments					
11.9 Total personnel compensation	1,680	-68	1,612	1,800	+188
12.1 Personnel benefits: Civilians	280	-11	269	250	- 19
21.0 Travel and transportation of persons	160	- 6	153	160	+ 7
22.0 Transportation of things	5	-0-	5	5	-0-
23.2 Communications, utilities, and rents	270	-11	259	280	+ 21
24.0 Printing and Reproduction	50	- 2	48	50	+ 2
25.0 Other services	743	-38	898	527	-371
26.0 Supplies and materials	45	- 2	43	48	+ 5
31.0 Equipment	25	- 1	24	30	+ 6
32.0 Lands and structures	14,760	-634	14,127	15,000	+873
41.0 Grants, subsidies, and contributions	4,473	-188	4,282	4,185	- 97
Total Requirements	22,491	-961	21,720	22,335	615

1/ For detailed breakdown of components of this figure, see the chart on page 5. The base figure includes the appropriation enacted, .6% across the board reduction imposed by the Interior committees, carryover from FY '85 and the sequestered amount.

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Title of Activity: Operation of the Commission

Authorization: P.L. 93-531; 88 Stat. 1712 Sec. 12; 25 U.S.C. 640d.

(dollar amounts in thousands)

Program Element	FY 1986 Approp Enacted	FY 1986 Seq.	FY 1986 Base 1/	FY 1987 Estimate	Inc.(+) Dec.(-) From 1986	Inc.(+) Dec.(-) From Base
Operation of the Commission	3,258	-139	3,311	3,150	-108	-161
FTE	(57)		(57)	(57)	(0)	(0)

Base Program: The operations of the Navajo and Hopi Indian Relocation Commission can be broken down into five program areas:

1. Expenses of the Commissioners
2. Executive Direction, statistics, reporting & personnel
3. Advisory Assistance Services
4. Housing Acquisition and Site Development
5. Administration, Finance and New Lands Management and Coordination.

Expenses of the Commissioners: The Commissioners are responsible for the formulation of all agency management and operational policy and the oversight of all agency programs. Public meetings are held throughout the year to present Commission policy to the affected groups and to gather input of ongoing agency activity as well as to stimulate new ideas. The Commissioners frequently alternate attendance at these meetings to minimize expenses. Appeal Hearings are conducted concerning program benefit claims and denials.

Executive Direction: This office supervises all of the Commission's operational programs, coordination of legal services, implementation of Commission policy and the development and implementation of program initiatives.

This office also provides internal program review and produces the Monthly Program Update and Report, Annual Reports of the Commission, and special activity reports. Monitoring and review of joint venture proposals from other federal, state and Tribal entities engaging in relocation program activities is also undertaken. The agency personnel functions are also included in the Executive Director's office.

1/ For detailed breakdown of components of this figure, see the chart on page 5. The base figure includes the appropriation enacted, .6% across the board reduction imposed by the Interior committees, carryover from FY '85 and the sequestered amount.

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Advisory Assistance Services: Advisory Assistance Services provide ongoing consultation with the relocatee family from the beginning to the end of the process. These services will include pre-move counseling to inform the families of various options available in the selection of a home, evaluation of economic and social status of the relocatees, coordination of other federal and state agency assistance activities for relocatee families and referral assistance to existing service providers upon completion of the relocation process. Within the limits of available resources, the Commission will increase emphasis on post-move counseling services.

Housing Acquisition and Site Development: This office provides for a full range of real estate acquisition activity and includes new construction contracting, acquisition of new and resale dwellings, procurement of modular units, and monitoring of any necessary warranty or housing repair programs. Coordination of group moves and other innovative approaches to housing acquisition is also encompassed within this activity. This office also provides engineering and technical assistance to other agency components. This includes engineering reports, engineering and topographic analysis, construction and housing inspections, technical support service coordination with other agencies, analysis of proposed construction plans and on-reservation building site feasibility analysis. The Commission anticipates the acquisition of 210 new relocation dwellings and the evaluation of 150 on-reservation building sites (homesite leases). The primary mission of this unit is to insure that relocatee dwellings meet all applicable decent, safe, and sanitary standards, and that building sites offer families the best possible structural alternatives.

Administration, Finance and New Lands Management & Coordination: This activity provides necessary administrative and financial management services to the agency. This includes the preparation and presentation of the Commission's budget proposals, all internal financial management programs, support for agency program departments through improved supply and equipment maintenance systems, all financial reporting and disbursement, personnel services, vehicle fleet management, facilities & communications management, data and word processing, discretionary fund program contracting and grant management, procurement, contracting for services, and cooperative/reimbursable agreements with other agencies.

This activity also provides the technical analysis attendant to acquisition of alternative land areas for relocation purposes and assesses the development necessary for facilities and services. Such analyses include appraisal of the various sites, negotiations with current permit or lease holders, engineering analysis, grazing capability analysis and review of the sites by potential relocatee occupants. Utilization of existing federal and state agency surveys and studies in the area of soil composition, water development and mineral composition is stressed to avoid duplication of effort.

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JUSTIFICATION

Operation of the Commission: (Decrease of $161,000)

Explanation

The Commission will absorb this reduction through across the board reductions which will keep the impact on each object class minimal.

Impact of P.L. 99-177 on 1986 Activities

Carryover from FY 1985 into this activity will offset the impact of P.L. 99-177.

Title of Activity: Relocation Operations

Authorization: P.L. 93-531; 88 Stat. 1712 Sec. 14 & 15, 25 U.S.C. 640d

(dollar amounts in thousands)

Program Element	FY 1986 Approp Enacted	FY 1986 Seq.	FY 1986 Base 1/	FY 1987 Estimate	Inc.(+) Dec.(-) From 1986	Inc.(+) Dec.(-) From Base
Relocation & Assistance Payments	15,755	-673	15,088	17,185	1,430	2,097
FTE	(0)	(0)	(0)	(0)	(0)	(0)

Base Program: Relocation Operations encompasses two components: assistance (bonus) payments and relocation payments for housing. The bonus payments are given as an incentive to those families who voluntarily participate in the relocation program. In 1987, the Commission expects to relocate an additional 210 families. The relocation payments for housing include the appraisal of property and improvements being vacated on the former Joint Use Area, their disposal upon relocation, the costs of obtaining homesite leases and other permits from the Navajo and Hopi Tribes, the acquisition of housing for relocatee families through resale dwelling purchases in existing communities for the construction of new homes on or off-reservation and payments associated with the relocation process including moving expenses.

1/ For detailed breakdown of components of this figure, see the chart on page 5. The base figure includes the appropriation enacted, .6% across the board reduction imposed by the Interior committees, carryover from FY '85 and the sequestered amount.

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JUSTIFICATION

Relocation and Assistance Payments: (Increase of $2,097,000)

Explanation

With the housing funds available the Commission will be able to relocate 210 families. This will support (1) the acquisition of replacement housing, (2) the appraisal payments due families for improvements on the former Joint Use Area, (3) payments due families for reasonable search and moving expenses to new locations, and (4) necessary payments for miscellaneous expenses such as title and escrow fees and homesite lease acquisition costs. This activity also includes sufficient bonus funds to match the housing monies appropriated to the BIA.

It is imperative that the relocation effort continue in a consistent manner to insure the success and credibility of the program. Uncertainty and confusion would be the only result of an interruption in the relocation process. The families who have chosen to voluntarily relocate have made the necessary plans to begin a new life and should be allowed to complete the transition in an orderly and predictable manner.

Impact of P.L. 99-177 on 1986 Activities

Approximately ten (10) fewer relocations will be accomplished in 1986 as a result of P.L. 99-177.

Title of Activity: Discretionary Funds Management

Authorization: P.L. 93-531, 88 Stat. 1712, Sec. 27; 25 U.S.C. 640d.

(dollar amounts in thousands)

Program Element	FY 1986 Approp Enacted	FY 1986 Seq.	FY 1986 Base 1/	FY 1987 Estimate	Inc.(+) Dec.(-) From 1986	Inc.(+) Dec.(-) From Base
Discretionary Funds	3,478	-149	3,321	2,000	-1,478	-1,321
FTE	(0)		(0)	(0)	(0)	(0)

Base Program: Discretionary Funds will be primarily used to facilitate and expedite efforts associated with the development of the new lands for resettlement purposes. This includes the finite physical planning necessary to develop sites such as water source improvements, waste disposal systems, utilities, chapter service centers, and overall resource management implementation projects.

1/ For detailed breakdown of components of this figure, see the chart on page 5. The base figure includes the appropriation enacted, .6% across the board reduction imposed by the Interior committees, carryover from FY '85 and the sequestered amount.

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JUSTIFICATION

Discretionary Funds: (Decrease of $1,321,000)

Explanation

Availability of these funds to underwrite the shared cost of infrastructure projects on the existing Navajo Reservation, as well as continued planning for and preparation of the new lands is critical to the progress of the Commission. In FY 1986 the Senate subcommittee added two million to this category to match IHS funding for completion of ongoing infrastructure on reservation lands other than the new lands. Removing this amount from the 1986 base there is actually a $500,000 increase in Discretionary Funds.

Impact of P.L. 99-177 on 1986 Activities

The Commission was already deficient by an amount of $161,000 to fulfill its required match with Indian Health Services for completion of ongoing infrastructure projects on the existing reservation. Both that amount mentioned above and the P.L. 99-177 reduction will reduce the approximately $500,000 which the Commission had anticipated using largely in pre and post-move counseling contracts. However, P.L. 99-190 added approximately $250,000 to the Commission's budget for such activities. The net result is a basic offset resulting in approximately the same level of activity as 1985.

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Navajo and Hopi Indian Relocation Commission

Salaries and Expenses

Program and Performance

The Navajo and Hopi Indian Relocation Commission was established by Public Law 93-531 to plan and conduct relocation activities associated with the settlement of a land dispute between the two tribes. The three-member Commission which was appointed on July 1975, submitted a plan for such relocation to the Congress and is continuing to conduct relocation activities.

Amending legislation, P.L. 96-305, authorized the Commission to grant Life Estates to eligible applicants, conduct a program of Discretionary Funding, and engage in land evaluation/analysis for possible acquisition as relocation sites, and provide for its own administrative, fiscal and housekeeping services.

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NAVAJO AND HOPI INDIAN RELOCATION COMMISSION

Federal Funds

General and special funds:

SALARIES AND EXPENSES

For necessary expenses of the Navajo and Hopi Indian Relocation Commission as authorized by Public Law 93-531. [$22,491,000] $22,335,000 for operating expenses of the Commission. (Department of the Interior and Related Agencies Appropriations Act, 1985, as included in Public Law 99-190)

Program and Financing (in thousands of dollars)

Identification Code 48-1100-0-1-806	1985 Actual	1986 Enacted	1986 Est.	1987 Est.
Program by activities:				
Operation of relocation commission	3,018	3,470	3,312	3,150
Assistance payments (bonus)	1,049	1,006	961	2,185
Relocation payments (housing)	14,933	14,849	14,126	15,000
Discretionary fund payments	1,632	3,491	3,321	2,000
Total obligations	20,632	22,816	21,720	22,335
Financing:				
Recovery of prior year obligations	-521			
Unobligated balance available, start of year	-114	-325	-325	
Unobligated balance available, end of year	325			
Budget authority	20,322	22,491	21,395	22,335
Budget authority:				
Appropriation	20,322	22,491	22,491	22,335
Reduction pursuant to P.L. 99-190		-135	-135	
Reduction pursuant to P.L. 99-177			-961	
Appropriation (adjusted)	20,322	22,356	21,395	22,335
Relation of obligations to outlays:				
Obligations incurred, net	20,632	22,816	21,720	22,335
Obligated balance, start of year	5,746	8,543	8,543	11,177
Obligated balance, end of year	-8,543	-11,083	-11,177	-12,064
Adjustment in expired accounts				
Adjustment in unexpired accounts	-521			
Outlays excluding pay raise supplemental	17,314	20,276	19,086	21,448

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NAVAJO AND HOPI INDIAN RELOCATION COMMISSION

SUMMARY OF BUDGET AUTHORITY AND OUTLAYS

Program and Financing (in thousands of dollars)

Identification Code 48-1100-0-1-806	1985 Actual	1986 Enacted	1986 Est.	1987 Est.
Enacted/Requested:				
Budget Authority	20,322	22,166	22,356	22,335
Outlays	17,314	19,951	20,047	21,448
Reduction Pursuant to P.L. 99-177:				
Budget Authority		961	961	
Outlays		606	606	355
Total:				
Budget Authority	20,322	21,205	21,395	22,335
Outlays	17,314	19,345	19,441	21,093

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NAVAJO AND HOPI INDIAN RELOCATION COMMISSION

SALARIES AND EXPENSES

Identification Code 48-1100-0-1-806	1985 Actual	1986 Enacted	1986 1/ Est.	1987 Est.
Personnel compensation:				
11.1 Full-time permanent	1,485	1,680	1,612	1,800
11.3 Other than full-time permanent				
11.8 Special personal service payments				
Total personnel compensation	1,485	1,680	1,612	1,800
12.1 Personnel benefits: civilian	214	280	269	250
13.0 Benefits for former personnel				
21.0 Travel and transportation of persons	151	160	154	160
22.0 Transportation of things		5	5	5
23.2 Communications, utilities, and rent	267	270	259	280
24.0 Printing and reproduction	50	50	48	50
25.0 Other services	753	955	898	527
26.0 Supplies and materials	46	45	43	48
31.0 Equipment	51	25	24	30
32.0 Lands and structures	14,933	14,849	14,126	15,000
41.0 Grants, subsidies, and contributions	2,681	4,497	4,282	4,185
99.9 Total Obligations	20,631	22,816	21,720	22,335

Personnel Summary

	1984	1985	1986
Total number of full-time permanent positions	49	50	50
Total compensable workyears: Full-time equivalent employment	50	52	52

1/ For detailed breakdown of components of this figure, see the chart on page 5. The base figure includes the appropriation enacted, .6% across the board reduction imposed by the Interior committees, carryover from FY '85 and the sequestered amount.

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FY 1987 STAFF REQUIREMENTS

TITLE	NHIRC GRADE	ANNUAL SALARY	% FTE	COST
OFFICE OF POLICY AND DIRECTION				
Commissioner	SES-4	68,700	66.7	45,755
Commissioner	SES-4	68,700	66.7	45,755
Commissioner	SES-4	68,700	66.7	45,755
Executive Secretary	14	23,153	100	23,153
Executive Direction				
Executive Director	31	65,000	100	65,000
Executive Secretary	14	22,930	100	22,930
Attorney	26	45,000	100	45,000
Personnel Officer	19	35,852	100	35,852
Research/Publication Offcr	21	50,504	100	50,504
Information Analyst	14	20,373	100	20,373
OFFICE OF ADMINISTRATION				
Director	28	54,516	100	54,516
Admin Coordinator	19	27,521	100	27,521
Computer Operator	10	21,178	100	21,178
Executive Secretary	10	16,291	100	16,291
Clerk-Typist	5	14,941	100	14,941
Secretary	7	16,932	100	16,932
Data Clerk	3	17,894	100	17,894
Financial Officer	19	33,015	100	33,015
Accounting Technician	10	20,430	100	20,430
Supply Technician	9	15,981	100	15,981
Financial Clerk	7	14,073	100	14,073
Management Analyst	19	34,504	100	34,504
Systems/Prcedures Analyst	15	24,185	100	24,185
Grants Administrator	19	35,611	100	35,611
Research/Evaluation Asst	11	17,106	100	17,106
Land Use Manager	21	44,112	100	44,112
Lands Development Spec	17	29,253	100	29,253
Range Technician	8	14,777	100	14,777
Range Technician	8	15,220	100	15,220
Maintenance Worker	10	16,291	100	16,291

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SMITHSONIAN INSTITUTION

FISCAL YEAR 1987

Justification of Estimates of Appropriations

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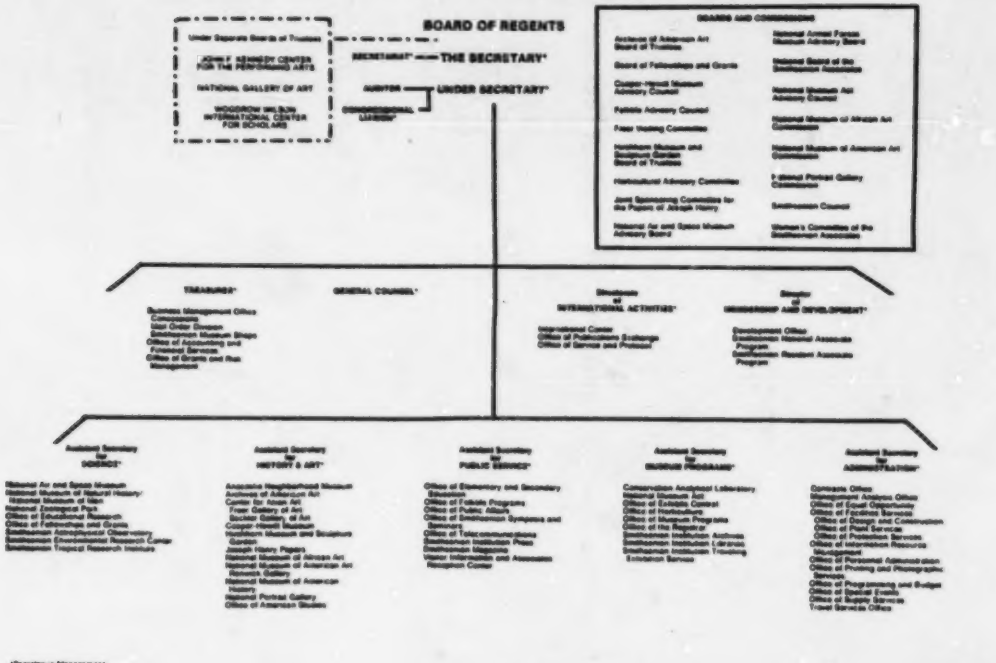
SMITHSONIAN INSTITUTION



*Secretary's Management Committee

December 1984

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SMITHSONIAN INSTITUTION

FISCAL YEAR 1987 ESTIMATES OF APPROPRIATIONS

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GENERAL STATEMENT

Organization and Performance

Founded in 1846, the Smithsonian Institution is an independent Federal establishment devoted to public education, research and national service in the arts, sciences and history. Centered on The Mall in Washington, D.C., the Institution operates major facilities and activities throughout the country and overseas. It is one of the world's leading research centers and encompasses the world's largest museum complex, attracting millions of visitors annually to its museums, galleries and zoological park. Many others also view Smithsonian traveling exhibitions, which appear across the United States and abroad, and the annual Folklife Festival. As custodian of the National Collections, the Smithsonian possesses more than 100 million art objects, natural history specimens and artifacts. These collections are displayed for the enjoyment and education of visitors and are available for research by the staff of the Institution and by hundreds of visiting students, scientists and historians each year. Other significant study efforts draw their data and results directly from terrestrial, marine and astrophysical observations at various Smithsonian installations.

The Smithsonian complex presently consists of 13 exhibition buildings in Washington, D.C. and New York City in the fields of science, history, technology and art; a zoological park in Washington, D.C. and an animal conservation and research center near Front Royal, Virginia; the Anacostia Neighborhood Museum, which performs research and exhibit activities in a low income area of the city in cooperation with the community; a preservation, storage and air and spacecraft display facility at Suitland, Maryland; two natural preserves in Panama and on the Chesapeake Bay; a photo-biological laboratory in Rockville, Maryland; an oceanographic research facility at Link Port, Florida; astrophysical stations in Massachusetts and Arizona; and supporting administrative, laboratory and storage areas.

Effective by mid-1986, the Smithsonian Institution will be reorganized along more functional lines to achieve strengthened coordination and oversight of related programs. The position of Assistant Secretary for Museums has been established combining the line responsibilities previously held by the Assistant Secretaries for History and Art and Museum Programs. All museums and closely related program and supportive activities are being assigned to this position. Similarly, the position of Assistant Secretary for Research has been established, replacing the Assistant Secretary for Science, with direct responsibility for the Institution's research programs and certain closely related supportive activities. It is expected that these two new Assistant Secretaries will work closely together in oversight of the total body of work under their purview. In another action, the development function has been redefined to allow bureaus and offices to exercise more direct fund-raising efforts in coordination with the Office of Membership and Development. These changes are not reflected in this budget.

Smithsonian Goals and Functions

The goal of the Smithsonian Institution is to promote the increase and diffusion of knowledge. To accomplish this goal, the Smithsonian conducts a broad variety of programs alone and in cooperation with other institutions, universities and government agencies in the United States and abroad. These programs include:

--Collections management: The Smithsonian Institution has the legal responsibility (20 U.S.C. 59) to serve as the official repository of the National Collections which contain more than 100 million art, technological and cultural history objects and natural history and anthropological specimens and artifacts. The responsibility involves the acquisition, documentation and conservation of these

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materials along with detailed record keeping or cataloguing, regular inventories and storage or display in secure and atmospherically controlled environments.

--Basic research: The Smithsonian, by virtue of its staff, collections, data bases and research facilities, is a unique international resource in basic research. Complementing industrial, Federal and university research, the Smithsonian's long-term research activities provide critical continuity to the Nation's research enterprise in a number of disciplines. Smithsonian research serves as the foundation for the Institution's public activities. The accuracy and currency of the Institution's exhibitions and the quality of its public education programs depend directly on the research of the staff.

--Exhibitions, including performances and festivals or celebrations: These presentations constitute one means of diffusing knowledge on a wide scale. In Washington, D.C. and New York City, Smithsonian museums, galleries and the zoological park devote exhibit space to showing significant objects, specimens and animals from the permanent collections. In addition, temporary exhibitions with loan materials enhance these presentations, adding fresh concepts and ideas—further enriching visitor experiences. Through the Smithsonian Institution Traveling Exhibition Service, over 100 exhibitions are seen annually by millions of people in most states and the District of Columbia. Live performances, festivals, celebrations, lectures and records also are enjoyed by millions of people.

--Education: Education programs of the Institution offer enormous variety in content and form; they range from in-depth, scholarly symposia to activities for fun and enjoyment and reach all ages from young children to senior citizens. They include classes and workshops, guided tours by trained docents, and radio, television and motion picture programs, sponsored by the individual museums and by centralized offices including Fellowships and Grants, Symposia and Seminars, and Elementary and Secondary Education. A significant aspect of the education effort involves production each year of several hundred publications including museum catalogues, books, scholarly monographs, articles, papers, the Archives of American Art Journal and Smithsonian magazine, which is now received by over 2 million Associates' families. At any given time, there are likely to be two to three hundred visiting scholars, scientists and students working throughout the Institution in various collections, laboratories and offices. Finally, as another educational endeavor, the Institution offers assistance to museums across the country and abroad by conducting museum training courses, producing and distributing audio-visual programs on conservation principles and techniques and by awarding grants for professional museum training and research.

--Collections acquisition: The Smithsonian museums acquire works of art, artifacts and specimens and other objects in three ways: by collecting, by donation and by purchase. Collecting and donation are and will continue to be the major means for acquiring materials for the collections. However, donations and gifts of collections, for the most part, do not lend themselves to planned development. If the Institution's research and exhibitions programs are to thrive, the collections must grow by thoughtful design. To meet this responsibility and challenge, the Smithsonian provides funding specifically for collections acquisition for the museums. Some Federal funds are requested each year to permit regular planned purchases.

In order to carry out these functions, administration and facilities services units of the Institution provide the required support. The Smithsonian has the responsibility for the maintenance, operation and protection of a large complex of museum and gallery buildings and other facilities. The Institution also provides architectural

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and engineering services for major repairs, alterations and improvements to the physical plant.

FY 1987 Budget Priorities

The funding needs addressed in the Smithsonian's FY 1987 budget request represent the Institution's priorities identified through the review and evaluation of specific program requirements within the context of broad goals for FY 1987 and the future as expressed by the Secretary. These major program priorities, determined with the participation of managers and administrators at each stage of review, continue the emphasis from FY 1986 and previous years to provide adequate base resources to enable all of the Institution's museums, research organizations and support functions to carry out their ongoing programs effectively; to establish the base level of support for Quadrangle programs and activities required for the scheduled public opening in mid-1987 and for full operations; to continue the equipping of the Museum Support Center (MSC) and the preparation and transfer of museum collections to the MSC; and to ensure the long-term maintenance and improvements to the building and facilities of the Institution. Other priorities identified are further support for the current research programs of the Institution, especially in the fields of tropical biology, astrophysics, and art; exhibitions and public programs to commemorate the Bicentennial of the Constitution in 1987; and the planning and development of the programs, exhibitions and activities to commemorate the Quincentenary (in 1992) of the voyage of Christopher Columbus to the New World. These priorities are reflected in the Institution's budget request for FY 1987. Major construction projects supported in the FY 1987 budget include the Quadrangle project and the construction of a conference and laboratory facility for the Smithsonian Tropical Research Institute.

I. Salaries and Expenses

FY 1985 Actual	FY 1986 Appropriation	FY 1987 Estimate
$164,148,000	$176,995,000	$190,061,000

The requested increase of $13.1 million over the FY 1986 appropriation consists of $6.1 million for uncontrollable increases; $4.2 million of Quadrangle-related support; $1.45 million for Museum Support Center equipment and move; $1.0 million for research programs and support; $376,000 for the exhibitions and programs to commemorate the Bicentennial of the U. S. Constitution; and $245,000 to begin the planning and development of programs to commemorate the Columbus Quincentenary. The FY 1987 request includes the reduction of $348,000 reflecting the elimination of the one-time FY 1986 trustee grant to John F. Kennedy Center.

Uncontrollable increases include projected higher costs in FY 1987 compared with FY 1986 for current staff ($1.9 million), for utilities, postage, and communications ($2.4 million), and for space rental ($349,000); and resources to help compensate for the effects of inflation in nonsalary areas of expense ($1.6 million). Also included as uncontrollable costs are the increased requirement for workers' compensation ($192,000) and the Grade Target Reduction assessed by the Office of Management and Budget for FY 1987 ($373,000).

For FY 1987, an increase of $4.2 million is requested for Quadrangle-related support. Of this amount, a sum of $1.6 million is required to annualize the partial-year funding for 113 positions approved in the FY 1986 budget for Quadrangle support. An additional sum of $1.3 million is requested for the personnel costs of 94 new positions to be hired during FY 1987. (Full-year funding for these new positions is anticipated to be sought in the FY 1988 budget request.) An amount of $1.3 million also is requested for Quadrangle-related program support costs. The requested

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funding is essential in order that the Institution can continue to plan to have the public opening of the Quadrangle in mid-1987. Major inaugural exhibitions are planned for the galleries located in the Quadrangle. At the Sackler Gallery, the collection of objects donated by Dr. Arthur M. Sackler will be displayed, with other major objects from his private collection on loan. The National Museum of African Art will present three important exhibitions: "African Art and the Cycle of Life," "African Textiles," and "African Art from the Permanent Collection." In the International Gallery, the exhibition "Generations: Birth Rituals and the Roots of Becoming" will provide a multidisciplinary, multicultural investigation of the art and rituals associated with birth from ancient times to the present.

A total of $4.6 million, an increase of $1.3 million over the FY 1986 base, is required to continue the purchase and installation of collections storage equipment for the Museum Support Center. In addition, funding of $712,000 (an increase of $150,000 over the FY 1986 base) will be needed in FY 1987 to prepare and transfer the collections to the MSC.

For FY 1987, an increase of $1.0 million is requested to augment Smithsonian's current research capabilities. An amount of $345,000 is requested for the National Museum of Natural History to study biological diversity in the Amazon Basin. The Smithsonian Astrophysical Observatory requests $150,000 to initiate instrument development in the new field of submillimeter astronomy. A requested increase of $345,000 for the Smithsonian Tropical Research Institute will permit the expansion of its research capabilities in tropical biology. Increases totaling $175,000 are requested for the National Museum of American Art, the Hirshhorn Museum and Sculpture Garden, the Archives of American Art, and the Cooper-Hewitt Museum to reinforce the research programs related to their collections. Expanded support for research has been identified as an important priority for the Institution.

To present exhibitions and public programs related to the commemoration of the Bicentennial of the Constitution in 1987, an increase of $376,000 is requested. The National Museum of American History will mount a special exhibition, "The Japanese American Experience in World War II," as the centerpoint for an exposition on the Constitution as a living and unfolding document. The National Portrait Gallery will research and develop an exhibition on "Portraits of Distinguished Jurists," featuring a selection of the most historically enlightening portraits of individuals who have been pivotal interpreters and shapers of our legal institutions. The Office of Smithsonian Symposia and Seminars will sponsor a symposium on "Constitutional Roots, Rights, and Responsibilities," in May 1987 and the Office of Elementary and Secondary Education will support a three-part program to highlight the meaning of the 200th anniversary of the U. S. Constitution and the Bill of Rights for elementary and high school students.

Initial funding of $245,000 is requested to support the development of preliminary planning and Institution-wide coordination of the wide range of public and scholarly programs to commemorate the 500th anniversary of Christopher Columbus' voyage to the New World. The Quincentenary celebration will offer an opportunity to encourage public and scholarly consideration of the significance of Columbus' voyage and to promote better understanding of the Americas as a geographical entity with shared historical roots and concern for future life in this hemisphere.

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	FY 1986 Base	Uncontrollable Increases	Program Increases	FY 1987 Estimate
Science	$ 57,648,000	$1,519,000	$ 825,000	$ 59,992,000
History and Art	32,193,000	784,000	2,012,000	34,989,000
Public Service	2,325,000	48,000	31,000	2,404,000
Museum Programs	10,831,000	267,000	356,000	11,454,000
Directorate of International Act.	527,000	10,000	490,000	1,027,000
Special Programs	8,500,000	113,000	1,213,000	9,826,000
Administration	12,411,000	68,000	25,000	12,504,000
Facilities Services	52,560,000	3,286,000	2,019,000	57,865,000
Total	$176,995,000	$6,095,000	$6,971,000	$190,061,000

II. Special Foreign Currency Program

FY 1985 Appropriation	FY 1986 Appropriation	FY 1987 Estimate
$8,820,000	$2,485,000	$ -0-

The Smithsonian's Special Foreign Currency Program supports research conducted by United States institutions in excess currency countries. Since the inception of the Program in FY 1966, Special Foreign Currency Program grants have been made to 247 United States institutions to support more than 850 individual projects. Publications resulting from Program grants total more than 1,450 to date. In FY 1986, the Smithsonian will provide the final contribution (for a total of $4.0 million) to salvage the city of Moenjodaro in Pakistan. No additional funding for this Program is requested for FY 1987.

III. Facilities Planning, Renovation, Restoration and Construction

FY 1985 Appropriation	FY 1986 Appropriation	FY 1987 Estimate
$18,326,000	$20,503,000	$25,179,000

Construction and Improvements, National Zoological Park ($4,851,000) - The FY 1987 budget request for Construction and Improvements at the National Zoological Park will support the renovation of the old hospital and research building at Rock Creek into a modern research facility ($2.5 million); the second phase of the renovation and improvement of Olmsted Walk ($600,000); and renovation, repairs and improvements at Rock Creek ($1.4 million and at the Zoo's Conservation Research Center at Front Royal, Virginia ($351,000).

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Restoration and Renovation of Buildings ($12,828,000) - The FY 1987 appropriation request for Restoration and Renovation of Buildings consists of repairs to facades, roofs and terraces of various historical and monumental buildings; the upgrading, including planning and installation, of fire detection and suppression systems; the provision of improved access for the disabled; the correction of conditions that could be hazardous to the safety and security of the visiting public, staff and the collections; repairs and improvements to utility systems in several museum and collections storage buildings, including heating, ventilating and air conditioning systems and plumbing and electrical systems; general repairs and improvements that are required for a variety of purposes; and improvements in support of programmatic objectives, the most notable of which are major renovation at the Freer Gallery of Art and construction of facilities in support of research at the Smithsonian Tropical Research Institute.

Construction ($7,500,000) - The FY 1987 budget request for major construction will provide funding for the completion of the Quadrangle ($4.0 million) and construction of a laboratory and conference center to be build at the Smithsonian Tropical Research Institute in Panama City ($3.5 million, with an additional amount of $4.0 million provided by a donation from the family of the late Earl S. Tupper).

Balanced Budget and Emergency Deficit Control Act of 1985 (P.L. 99-177)

The 4.3 percent sequestration required under the Balanced Budget and Emergency Deficit Control Act of 1985 (Public Law 99-177) amounts to $8,599,000 for all accounts as follows:

($000)

Account	FY 1986 Appropriation	Sequestration (4.3 percent)	FY 1986 Reduced Appropriation
Salaries and Expenses	$176,995	$ 7,611	$169,384
Special Foreign Currency Program	2,485	107	2,378
Construction and Improvements, NZP	5,518	237	5,281
Restoration and Renovation of Buildings	11,009	473	10,536
Construction	3,976	171	3,805
Totals	$199,983	$ 8,599	$191,384

The sequestration is shown in this budget at the line item level within the Salaries and Expenses appropriation and at the appropriation level for the other accounts. Following general discussion and suggestions as to strategy, the directors of organizational units or programs were asked to prepare revised program and financial plans reflecting the appropriation reductions. These plans, to be submitted in early February, will be reviewed and approved for effectiveness in meeting the required curtailments and for acceptable levels of consistency in continuing services to the Institution's full range of constituents. Reductions in all areas of Smithsonian service are expected. It should be noted that this sequestration of funds comes one-third into FY 1986 and thus amounts to approximately a six percent cut for the balance of the year. Furthermore, it comes on the basis of a two percent base reduc-

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tion in FY 1985 which continues in FY 1986 with a further 0.6 percent reduction in this year and other cuts in requested funds to correct base shortages. Information on specific actions to be taken by the Institution as a result of these across-the-board reductions will be available for the appropriation hearings and, as necessary, will be presented to the Committees in reprogramming requests. Since the prospects for even larger reductions exist in FY 1987 and subsequent years, review and study efforts will get under way soon to examine closely a range of actions aimed at producing larger savings. The actions to be considered will include possible reorganizations, program curtailments and/or terminations, substantial reductions in public accessibility, and staff reductions or furloughs. In order to implement many of these actions, however, it will be necessary to break away from the across-the-board percentage approach required by the Act with additional flexibility provided to the Institution. The updated Five-Year Prospectus, usually submitted with the budget justifications, will be delayed until March or April.

NONAPPROPRIATED SOURCES OF FUNDING

In addition to the support provided by Federal appropriations, the Institution also receives nonappropriated funds to expand and enrich its programs. The Nonappropriated Fund activities (Trust funds) are presented along with the Federal budget request to provide an overview of all uses of funds for each Smithsonian bureau. It must be emphasized that the estimates for Trust funds are subject to change due to the unpredictability of donations, grants and contracts to the Institution, fluctuations in visitor attendance and uncertain economic factors affecting restaurant, mail order and shop revenues, Associates' memberships and other auxiliary activities. The Institution's gross operating revenue, less the expenses of the auxiliary activities, represents the net operating revenue available for programmatic and other worthwhile purposes.

The FY 1986 Trust budget comprises approximately 30 percent of the total Institution's gross operating revenues or approximately 22 percent of net operating revenues. Included in the above are Federal grants and contracts received from government agencies which are expected to total nearly $16 million in FY 1986. Gross revenues of nonappropriated Trust funds (excluding Federal grants and contracts) are expected to continue to grow as in previous years and reach $170 million in FY 1986. Net income, however, is projected in the $36 million range (of which $12 million is projected for restricted purposes).

The Trust funds are composed of unrestricted funds, restricted funds and Federal grants and contracts and are applied in the following manner:

A. Unrestricted Funds

1. General - Central management and administrative service units of the Institution, such as legal counsel, accounting, personnel, supply and budget receive Trust allotments. These allotments primarily are funded from overhead recovery on grants and contracts received by the Smithsonian and from internal administrative fees charged to other Trust-funded activities. Operating funds are provided to various activities such as the Visitors Information and Associates' Reception Center, the Cooper-Hewitt Museum, Smithsonian Tropical Research Institute, Office of Telecommunications and the Office of Folklife Programs along with a variety of program allotments for important Institutional and bureau needs as approved by the Board of Regents. These allotments primarily are funded from short-term investment income, unrestricted endowment income and net proceeds from museum shops, food service concessions, sales of Smithsonian books, records and other products based on designs and objects in the collections, and from the Resident Associate and National Associate Programs (including Smithsonian magazine).

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2. Special Purpose - Certain bureaus have income-producing activities, the largest of which are the Theater and Spacearium operations of the National Air and Space Museum. Also included in this category are miscellaneous bureau revenues from the sale of posters, exhibit brochures and publications; tuition grants from universities; the museums' share of sales in the restaurant and museum shops; membership and admission fees; exhibit rental; and investment income from current fund balances.

Beginning in FY 1979, the Board of Regents approved using the Institution's unrestricted Trust funds for certain programs previously financed with appropriated funds. These consist of the Institution's various fellowship programs (FY 1986 allotment of $2.3 million and almost $2.7 million in FY 1987) and the appropriate Trust fund share of rental costs of administrative units in L'Enfant Plaza, funded in part from rental payments by auxiliary activities occupying space on The Mall (FY 1986 allotment of $810,000).

The Special Purpose category also includes awards from the Institution's Collections Acquisition, Scholarly Studies and Educational Outreach Program, the Research Opportunities Fund, the Smithson Society Awards Program, and the Special Exhibition Fund.

A substantial continuing commitment under this category is the $2.65 million annual allocation for the Institution's Collections Acquisition, Scholarly Studies and Educational Outreach Program, first approved by the Board of Regents in FY 1978. Of the $2.65 million, an amount of $1.1 million is available annually for purchase of objects of outstanding importance to the collections. FY 1985 marked the initial participation of the Arthur M. Sackler Gallery in the Collections Acquisition portion of the Program. The Gallery's first purchase was an extraordinary late 18th- or early 19th-century Japanese ceremonial palanquin (norimono) finished in lacquer. In December 1985, the Gallery utilized these Program funds to provide partial support for the purchase of the Vever collection of magnificent Islamic and Persian art consisting of 39 volumes, 291 miniatures, 98 calligraphies and illuminations, 29 bookbindings, 4 textiles and examples of almost all of the classical Persian text known. The works in this collection will provide invaluable research material for a whole generation of scholars. In addition, the National Museum of American Art acquired its first painting by famed muralist Thomas Hart Benton, a 7 x 24 foot mural of "Achelous and Hercules"; the National Museum of Natural History/Museum of Man bought the outstanding Brodzinsky Fossil Amber Collection and a collection of Cyperacae Herbarium specimens; and the Hirshhorn Museum and Sculpture Garden purchased the Sculpture, Soft Engine for Air flow with Fan Transmission-Scale 5 (Model) by Claes Oldenburg. Each of these important acquisitions was supplemented by varying amounts of outside contributions.

An additional amount of $1.0 million is designated by the Program for scholarly research projects that do not lend themselves to or are not appropriate for Federal funding. These include multi-disciplinary research projects that can be carried out within and between bureaus and projects that have been awarded external funds, which require matching Trust amounts. For example, scientists at the National Museum of Natural History/Museum of Man (NMNH/MOM) are investigating major explosive eruptions of Costa Rican volcanoes. The study examines prehistoric volcanic activity and its role as an indicator of present land forms, and potential areas to be monitored for future volcanic activity. Little is known of the prehistoric volcanic activity in Costa Rica, and information produced will be compared with similar efforts worldwide, to develop a global volcanic profile. Also, the NMNH/MOM scientists are engaged in a study which focuses on the geological and paleontological evidence which might suggest the formation of the present Mediterranean Sea. The study will complement other efforts under way to understand how the earth was formed, and testing theories of plate tectonics and crustal formation.

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The remaining $550,000 of the $2.65 million available for this Program is allocated to conduct a wide range of educational outreach programs of benefit to the public such as to the Office of Fellowships and Grants for Visiting Academic Associates, a program to bring individuals from universities and colleges throughout the United States who have an interest and commitment to expanding minority academic opportunities to the Smithsonian to learn about research and professional opportunities; and to the Office of Education, National Museum of Natural History/Museum of Man and the Smithsonian National Associates Program for a workshop program offering teachers in cities remote from the Washington metropolitan area access to resources in the Smithsonian which will enliven their teaching and bring an understanding of the way in which natural science museums can be used to enhance the teaching of science. Funds have also gone to the Office of Museum Programs to conduct a two-day on-site training seminar "Policy and Management for Directors and Trustees of African-American Museums" for 26 African-American museum professionals and trustees; to an Exhibitions Design and Production Training Project consisting of a two week Smithsonian-based workshop in which ten participants from tribal museums were introduced to basic design and production information and assisted with the planning for the installation of an exhibit case or small area; and to the National Museum of American History for a unique demonstration/exhibit at the quadrennial meeting of the International Congress for the History of Science (and Technology) with the goal of educating academic historians to the potential uses of museum presentations in research and teaching.

In FY 1985, the Board of Regents approved an annual Trust-funded allocation for the Special Exhibition Fund. The cost of exhibition programs has generally been met with Federal funds which will continue to provide the predominant financing for the Institution's overall exhibition effort, as supplemented by donations from individuals, foundations and corporations. To be part of and administered similar to the Collections Acquisition, Scholarly Studies and Educational Outreach Program, the Special Exhibition Fund with $3 million in FY 1986 and $3.5 million in FY 1987 will increase opportunities by providing funds for important temporary major exhibitions as proposed by organizations of the Institution. Subject to a competitive review and selection process, the request must be for temporary special exhibitions of sufficient importance to provide benefit to the viewing public and accompanied by a scholarly catalogue or similar work. One of the first exhibitions to utilize these funds was "The Magnificent Voyagers" by the National Museum of Natural History/Museum of Man. This exhibition introduced to the American public the U.S. Exploring Expedition of 1838-1842 and established its place in the development of natural and naval science in America. Exhibitions currently in the planning stage include: "Field to Factory: Afro-American Migration 1915-1940" by the National Museum of American History, which will portray the movement of hundreds of thousands of Afro-Americans from southern states to northern urban centers during and after World War I; and "ZOOARK Twentieth Century: The Last Chance" by the National Zoological Park, which will assert the importance of zoos for the future of many endangered species and for the development of public opinion on the relationship between man and animals.

B. Restricted Funds

Restricted Trust funds include gifts, grants and endowments from individuals, foundations, organizations and corporations which specify the use of the donation or bequest. Generally, these funds provide support for a particular exhibit or research project. The Freer fund is the largest restricted endowment of the Institution. It is strictly controlled under the terms of the original gift and bequest for the sole use of the Freer Gallery of Art.

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C. Federal Grants and Contracts

Federal grants and contracts are provided by various agencies and departments for special projects which can be conducted at the Smithsonian because of its expertise in a particular area of science, history, art or education, and because of its ability to respond quickly to certain kinds of needs.

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SALARIES AND EXPENSES

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SMITHSONIAN INSTITUTION

SALARIES AND EXPENSES

Summary of FY 1987 Increase

Appropriation, FY 1986 /1		$176,995,000
FY 1987 Requested Increase:		
Uncontrollable Increase	$ 6,095,000	
Program Increase /2	6,971,000	
Total Requested Increase	$13,066,000	
FY 1987 Request		$190,061,000

/1 Reduction pursuant to Public Law 99-177 (Balanced Budget and Emergency Deficit Control Act of 1985) would be $7,611,000 resulting in an appropriation for FY 1986 of $169,384,000.

/2 Actual program increase totals $7,319,000 offset by a reduction of $348,000 (trustee grant to the John F. Kennedy Center in FY 1986) and includes an amount of $1,598,000 required to annualize the partial-year funding of 113 positions approved in the FY 1986 budget for Quadrangle-related support.

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SMITHSONIAN INSTITUTION
"Salaries and Expenses"
Summary of the 1985 Appropriation and the 1986 and 1987 Estimates

(Dollars in Thousands)
FTE = Full Time Equivalent

Page No.	Unit	1985 Actual FTE	1985 Actual Amount	1986 Base FTE	1986 Base Appropriation /1	1986 Base PL 99-177 /2	1987 Estimate FTE	1987 Estimate Amount	Analysis of Increase FTE	Analysis of Increase Uncontrollable	Analysis of Increase Program
	SCIENCE										
23	Asst. Secretary for Science	9	516	11	488	504	11	497	0	9	0
26	National Museum of Natural History	505	20,194	510	21,104	20,288	510	21,088	0	434	350
32	Astrophysical Observatory	98	8,446	97	8,696	8,349	97	9,291	0	445	350
39	Tropical Research Institute	88	3,554	87	3,798	3,643	87	4,243	0	100	345
47	Environmental Research Center	65	3,324	69	3,528	3,383	69	3,614	0	86	0
51	National Air and Space Museum	227	8,112	211	8,515	8,171	211	8,712	0	197	0
57	National Zoological Park	320	11,104	318	11,919	11,043	318	11,747	0	228	0
	Subtotal, Science	1,312	55,250	1,303	57,648	55,421	1,303	59,992	0	1,519	825
	HISTORY & ART										
62	Asst. Secretary for History and Art	9	401	8	364	424	8	370	0	6	0
64	National Museum of American History	501	11,130	501	11,912	11,542	501	12,357	0	280	185
72	National Museum of American Art	115	4,625	118	4,793	4,600	118	4,939	0	106	60
78	National Portrait Gallery	82	3,407	83	3,591	3,446	83	3,770	0	99	80
84	Hirshhorn Museum & Sculpture Garden	73	2,923	77	3,112	2,983	77	3,233	0	81	40
88	Center for Asian Art	33	1,549	46	3,074	2,946	68	4,108	22	98	934
98	Archives of American Art	17	732	15	894	858	18	931	0	12	25
102	Cooper-Hewitt Museum	26	880	26	942	903	26	1,011	0	19	50
107	National Museum of African Art	28	1,188	40	2,623	2,513	55	3,542	15	81	638
114	Anacostia Neighborhood Museum	17	817	19	888	852	19	910	0	22	0
	Subtotal, History and Art	701	27,652	736	32,193	30,869	773	34,989	37	784	2,012
	PUBLIC SERVICE										
118	Asst. Secretary for Public Service	25	1,170	23	1,204	1,190	23	1,257	0	22	31
124	Smithsonian Institution Press	29	1,124	29	1,121	1,078	29	1,147	0	26	0
	Subtotal, Public Service	54	2,294	52	2,325	2,268	52	2,404	0	48	31

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Page No.	Unit	1985 Actual FTE	1985 Actual Amount	1986 Base FTE	1986 Base Appropriation /1	1986 Base PL 99-177 /2	1987 Estimate FTE	1987 Estimate Amount	Analysis of Increase Uncontrollable FTE	Analysis of Increase Uncontrollable	Analysis of Increase Program
	MUSEUM PROGRAMS										
127	Asst. Secretary for Museum Programs	16	593	19	720	703	19	748	0	20	0
130	Office of the Registrar	1	32	2	99	95	2	102	0	3	0
132	Conservation Analytical Laboratory	32	1,783	39	2,019	1,945	39	2,089	0	50	0
137	Smithsonian Institution Libraries	91	4,299	96	4,684	4,495	98	4,836	2	140	32
142	Office of Exhibits Central	44	1,470	42	1,603	1,543	46	1,774	4	50	141
145	Traveling Exhibition Service	6	332	8	407	383	15	601	7	11	183
151	Smithsonian Archives	14	511	15	539	518	15	532	0	13	0
154	National Museum Act	3	793	3	772	739	3	772	0	0	0
	Subtotal, Museum Programs	207	9,763	224	10,831	10,361	237	11,454	13	287	356
197	DIRECTORATE OF INTERNAT'L ACTIVITIES	7	272	12	527	441	13	1,037	1	10	490
	SPECIAL PROGRAMS										
165	American Studies & Folklife Programs	9	698	8	711	681	8	735	0	24	0
169	Int'l Environmental Science Program	11	680	13	728	697	13	752	0	24	0
173	Academic & Educational Programs	20	705	19	701	730	19	838	0	16	111
180	Collections Management/Inventory	40	1,019	38	1,121	1,073	38	1,145	0	24	0
185	Museum Support Center	45	4,678	36	4,891	4,680	36	6,366	0	29	1,450
	John F. Kennedy Center Grants	0	686	0	348	333	0	0	0	0	-348
	Subtotal, Special Programs	125	8,466	114	8,560	8,202	114	9,826	0	113	1,213
190	ADMINISTRATION	247	11,393	250	12,411	11,435	252	12,504	2	68	25
	FACILITIES SERVICES										
196	Office of Design and Construction	39	1,923	35	2,088	2,009	35	2,123	0	35	0
199	Office of Protection Services	633	17,116	698	18,132	17,365	741	19,340	43	391	817
203	Office of Plant Services	419	30,019	451	32,340	31,013	500	36,402	49	2,860	1,202
	Subtotal, Facilities Services	1,091	49,058	1,184	52,560	50,387	1,276	57,865	92	3,286	2,019
	Workyear Allocation Adjustment						-45				
	GRAND TOTAL	3,744	184,148	3,875	176,995	169,304	3,975	190,061	145	6,095	6,971

/1 Reflects distribution of OMB Grade Target Reduction and other reorganizations and reprogrammings as detailed on page A-48.

/2 Reflects proposed level pursuant to the Balanced Budget and Emergency Deficit Control Act of 1985.

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FY 1987 UNCONTROLLABLE INCREASES

Funds are sought to finance increased costs that are beyond the control of the Institution. These costs result from established practices in regulating wages; higher utility, postage and communications charges; and the effects of inflation. Consequently, an amount of $6,095,000 is requested for these increases.

1. Salary and Related Costs	
--Within-grade Step Increases	$1,991,000
--Workers' Compensation	192,000
--OMB Grade Target Reduction	-373,000
Total Salary and Related Costs	$1,710,000
2. Utilities, Postage and Communications	
--Electricity	$2,394,000
--Steam	-442,000
--Gas	-302,000
--Fuel Oil/Water	65,000
--Communications	716,000
--Postage	315,000
--Reimbursements	-300,000
Total Utilities, Postage, Communications	$2,446,000
3. Rental Space	$ 349,000
4. Inflation	$1,590,000
Grand Total, Uncontrollable Increases	$6,095,000

SALARY AND RELATED COSTS - An amount of $1,710,000 is required for the projected higher costs in FY 1987 for FY 1986 staff. These are provided to employees as a result of within-grade increases ($1,891,000). Funds also are required in FY 1987 to cover increased workers' compensation costs ($192,000). These requested increases are being offset by a reduction of $373,000 which was mandated by the Office of Management and Budget (OMB) affecting positions in grades GS-11 through GS-15. Costs required for within-grade increases are calculated for each of the bureaus and offices taking into consideration workyears authorized by OMB.

Within-grade Step Increases - A sum of $1,891,000 is sought in FY 1987 for within-grade step increases. For General Schedule employees, these increases are required by Section 5335 of Title 5, United States Code. Wage employees are covered by law and prevailing rates. Increases include the part-year cost of new actions scheduled to occur in the budget year, as well as the cost of annualizing step increases occurring in the current fiscal year.

Workers' Compensation - An amount of $192,000 is required to meet the provisions of Section 8147(b) of Title 5, United States Code as amended on April 21, 1976 by Public Law 94-273. This law provides for payments to be made to employees for injuries and to their families in cases where work accidents result in employees' deaths. These payments are determined and made by the United States Department of Labor's Employment Standards Administration, which subsequently bills agencies for costs incurred for their employees. The Institution continues to pursue its Accident Safety Program administered by the Office of Protection Services. This Program includes employee training in safe working environments and supports a safety staff whose duties include identifying and eliminating potential accident hazards. The FY 1987 bill for the Institution totals $746,000. (This

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bill covers the actual expenses incurred for the period July 1, 1984 through June 30, 1985.) With an amount of $354,000 in the Institution's base for workers' compensation, additional funds totaling $192,000 are requested.

OMB Grade Target Reduction - In FY 1985, at the direction of the President, the Office of Management and Budget and the Office of Personnel Management (OPM) implemented a joint initiative to improve the management of positions and lower the average grade levels in the GS/GM-11 to-15 grade range. Thus far, the reduction assessed the Smithsonian is $560,000. A sum of $373,000 will be relinquished in FY 1987, and a like amount in FY 1988. For FY 1989, the reduction will be $186,000. The cumulative reduction over the five-year period will total $1,492,000.

UTILITIES, POSTAGE AND COMMUNICATIONS - The Smithsonian central utilities account in FY 1986 consists of $15,606,000 in base resources appropriated to defray the costs of electricity, steam, gas, fuel oil, water, postage, and communications at nearly all Institution facilities, including the Quadrangle now nearing completion. An amount of $2,446,000 is sought in FY 1987 to cover higher costs of these items. Projections of future year utilities costs are determined based on analyses which take into account a variety of factors. These projections include comparative data on actual energy consumption in previous years for each facility, and adjustments for normal weather conditions for this area based on information furnished by the National Weather Service; actual and projected rates charged by utility companies; actual and projected annual reimbursements for utility costs from concessions, Museum Shops and the Friends of the National Zoo; modifications to work and public spaces within facilities; vigorous energy conservation efforts under way in Smithsonian buildings; the design of new facilities constructed; and anticipated increases in consumption expected due to the installation of computers and other equipment used throughout the Institution to support program objectives. The following table shows the costs and funds available to cover the components of the utilities account between FY 1985 and FY 1987.

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ANALYSIS OF UTILITIES COSTS - FY 1985 - FY 1987

	FY 1985 Actual	FY 1986 Estimate	FY 1987 Estimate
ELECTRICITY			
Use - Millions of KWH	84.9	97.8	103.6
Unit Cost - Average per KWH	.0757	.0800	.0860
Cost - $000s	$6,422	$7,822	$8,908
FY 1987 Estimated Cost			$8,908
FY 1986 Base			$6,514
Base Shortage, Electricity			$2,394
STEAM			
Use - Millions of Pounds	167.0	189.0	204.0
Unit Cost - Average per 1,000 lbs.	15.5	14.5	14.5
Cost - $000s	$2,581	$2,741	$2,958
FY 1987 Estimated Cost			$2,958
FY 1986 Base			$3,400
Base Surplus, Steam			$ 442
GAS			
Use - Millions of Cubic Feet	1.194	1.242	1.292
Unit Cost - Average per Cu. Ft.	.7354	.7722	.7722
Cost - $000s	$ 878	$ 959	$ 998
FY 1987 Estimated Cost			$ 998
FY 1986 Base			$1,300
Base Surplus, Gas			$ 302
FUEL OIL/WATER			
Costs - $000s	$ 235	$ 325	$ 390
FY 1987 Estimated Cost			$ 390
FY 1986 Base			$ 325
Base Shortage, Fuel Oil/Water			$ 65
OFFSETTING REIMBURSEMENTS	$ -261	$ -292	$ -300

Electricity - The major component ($2,394,000) of the proposed utility increase is for electricity. Consumption and cost estimates have been refined to take into consideration full occupancy of the Museum Support Center in Suitland, Maryland, and the new Quadrangle facility on The Mall. Projected higher costs for electricity also take into consideration a 7.5 percent rate increase approved in FY 1985 by the District of Columbia Public Service Commission, and increased consumption due to installation of computers and other equipment used throughout the Institution to support program objectives.

Steam - The projected surplus of $442,000 for steam is attributable to a reduction in the rate charged by the General Services Administration which took effect in FY 1986 and more than offset consumption increases associated with the initial occupancy of the Quadrangle in FY 1987.

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Gas - The projected surplus of $302,000 for gas is attributable primarily to heightened conservation efforts which have offset increases in consumption due to occupancy of the Museum Support Center and as a result of space modifications to facilities at Suitland, Maryland and at the National Zoological Park.

Fuel Oil/Water - The projected shortage for fuel oil/water ($65,000) is attributable to increased fuel oil costs for the Museum Support Center.

ANALYSIS OF COMMUNICATIONS COSTS

($000s)	FY 1985 Actual	FY 1986 Estimate	FY 1987 Estimate
TELEPHONE	$2,390	$2,970	$3,448
FY 1987 Estimated Cost			$3,448
FY 1986 Base			$2,732
Base Shortage, Telephone			$ 716
POSTAGE	$1,260	$1,335	$1,650
FY 1987 Estimated Cost			$1,650
FY 1986 Base			$1,335
Base Shortage, Postage			$ 315

Telephones - In recent years, measures have been taken to limit communications costs including purchasing previously leased telephone equipment and reviewing long distance telephone bills. These actions have resulted in an estimated savings of $137,000 for FY 1986. Although steps have been taken to reduce costs, a projected shortage of $716,000 is estimated for FY 1987. Projections are based on full-year funding for the Quadrangle, additional communication lines required to link automated systems, and take into account an anticipated increase in FTS long distance costs resulting from the 24-hour-per-day charging system recently implemented by the General Services Administration. Projections also include amounts needed to repair and/or replace telephone equipment now owned by the Institution (these costs were previously covered under purchase warranty).

Postage - Practices begun in FY 1983 to limit costs are continuing. These include elimination of domestic package mailing at priority rates in favor of sending packages via parcel post; and limiting international air parcel shipments and express mail service. A projected shortage of $315,000 is estimated for FY 1987, which reflects a 20-percent rate increase granted by the United States Postal Service Board of Governors in February 1985.

RENTAL SPACE - This item consists of rental space costs of the administrative activities, managed by the Office of Plant Services (OPlantS), which are located at L'Enfant Plaza, the Smithsonian Institution Service Center at North Capitol Street, the Archives of American Art located in New York City and Boston, Massachusetts, and the facility managed by the Astrophysical Observatory in Cambridge, Massachusetts. An amount of $349,000 is requested in FY 1987 for increased costs of leased space, of which $119,000 is associated with facilities administered by OPlantS and $230,000 is associated with

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space administered by the Smithsonian Astrophysical Observatory in Cambridge, Massachusetts.

Office of Plant Services - The amounts shown on the following chart reflect anticipated costs for rental space at L'Enfant Plaza, the Smithsonian Institution Service Center at 1111 North Capitol Street, and the New York and Boston offices of the Archives of American Art. Although rental costs at L'Enfant Plaza are expected to rise by $50,000, the Federal payment will actually decline, due to an offsetting increase in the Trust fund contribution. The Trust fund payment, based in part on the amount of Mall office space occupied by the auxiliary activities, will increase as a result of additional space to be occupied by the Associate Programs in the new Quadrangle facility. The total rental costs for space at 1111 North Capitol Street will be paid from Federal resources as a result of the relocation of the Museum Shops' warehouse activities in mid-1986. Consequently, an amount of $135,000 is required in FY 1987.

Space presently occupied by the Archives of American Art in New York no longer accommodates current needs. Severe overcrowding and potential safety hazards have necessitated a move to new space. It is essential for the constituency of the Archives that the new space be located in the area where New York's art museums and galleries are concentrated. Negotiations for alternative space in a new location are under way. Based on the proposed lease agreement, an additional amount of $72,000 is required in FY 1987 to fund leased space for the New York operations. An amount of $1,000 is required for the Archives of American Art's Boston location.

The Federal rental share projected for this central rental account in FY 1987 totals $1,465,000. A sum of $1,346,000 is available in the base for FY 1986. Therefore, an additional amount of $119,000 is required to defray space rental costs at these locations in FY 1987.

FEDERAL RENTAL PROGRAM ADMINISTERED BY THE OFFICE OF PLANT SERVICES
FY 1985 - FY 1987

($000s)

	FY 1985 Actual Cost		FY 1986 Estimated Cost		FY 1987 Estimated Cost	
	Federal	Trust	Federal	Trust	Federal	Trust
L'Enfant Plaza	$ 449	$ 656	$ 490	$ 810	$ 389	$ 961
N. Capitol St.	729	78	804	57	939	—
Navy Yard Annex	362	—	—	—	—	—
Archives of American Art						
- New York	50	—	58	—	130	—
- Boston	6	—	6	—	7	—
Total Costs	$1,596	$ 734	$1,358	$ 867	$1,465	$ 961
Base	1,326	734	1,346	867	1,346	961
Surplus/(Deficit)	$ (270)	$ —	$ (12)	$ —	$ (119)	$ —

Smithsonian Astrophysical Observatory - An amount of $230,000 is requested to fund the increased costs of rental space for the Astrophysical Observatory's Cambridge, Massachusetts facilities. This increase is due primarily to an economic revitalization caused by the extension of the Massachusetts Bay Transit Authority subway system from Harvard Square to Alewife Brook Parkway, which in turn provides a basis whereby building owners can increase rates charged tenants for space in this area.

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Faced with this significant increase in rent expenses, it was determined that a move to a more convenient location, across the street from the Harvard College Observatory, SAO's main scientific facility, would be prudent. The cost of space at the new facility (160 Concord Avenue) is equal to that to be charged at the Alewife Brook Parkway facility and is fixed through FY 1990.

RENTAL COSTS ADMINISTERED BY THE SMITHSONIAN ASTROPHYSICAL OBSERVATORY

($000)

FY 1986 Estimated Costs	FY 1987 Estimated Costs	Additional Funding Required
$177	$407	$+230

INFLATION - Resources totaling $1,590,000 are requested to help offset the cumulative and anticipated costs to the Smithsonian as a result of estimated inflation. The amount requested represents 4.1 percent (inflation factor allowed by the Office of Management and Budget) of total nonsalary expenses for FY 1986, excluding costs of utilities, rent and the Museum Support Center move and equipment. Inflationary increases represent significant costs that have the cumulative effect of seriously eroding research, exhibitions, collections management, education and public orientation programs, as well as facilities management and administrative services. The result of inflation, therefore, is equivalent to a significant cut each year to the base resources of all the Smithsonian's approximately 65 organizational units.

Research - Cost increases have a severe effect on the Institution's ability to carry out its programs. In the area of scientific research, prices for scientific supplies generally are not increasing as dramatically as they have in the past. However, the bureaus continue to experience significant price increases for the maintenance and repair of sophisticated scientific equipment.

The effects of inflation on costs for books, journals, papers and publishing, as well as research-related items, has had an impact on virtually all of the Institution's programs. The Smithsonian Institution Libraries (SIL) purchases 78 percent of its journals from a serial subscription supplier. The price increase expected for FY 1986 from this supplier is projected to be 6 percent. The cost of series publications from other sources is expected to increase similarly. In FY 1985, the Libraries spent approximately $388,000 for serial subscriptions. Binding of library materials is yet another area subject to inflation. The Libraries is projecting a binding budget of $100,000 for FY 1986 and the inflation rate will not differ significantly from other years but is projected to hover around 8 percent. The final area of significant inflation costs for the Libraries is communications, specifically for on-line database access. In FY 1985, SIL spent over $60,000 for search and cataloging services from the On-line Computer Library Center (OCLC) and $49,000 for research databases. The divestiture of AT&T and other changes in major telecommunications networks could result in increases as high as 56 percent for the major utilities. Since SIL's contracts with OCLC and others are vital for major projects, SIL's portion of the fees for this service may very well be 10 percent higher than FY 1985 costs. SIL plans to spend about $70,000 on services from OCLC and an additional $55,000 for database searching for research in FY 1986.

The cost of publishing, which is essential to scientific research as well as to exhibitions and educational programs, will increase 5 to 6 percent in FY 1986 above FY 1985 prices. The following chart illustrates some further examples of price increases for items that are purchased regularly:

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Research and Scientific Supplies and Contracts

Item	FY 1985 Cost	FY 1986 Cost	Percentage Increase
Beakers, glass (reg., bx. of 8)	$379.00	$637.00	10 percent
Film, 35mm Ektachrome ASA 400, roll	6.00	6.30	5 percent
Automatic distillation apparatus	1,835.00	1,950.00	6 percent
Annual contracts:			
Scanning electron microscope (maintenance)	8,805.00	9,475.00	8 percent
Scientific balances	1,007.00	1,083.00	7 percent
Fixed electron microscope	7,020.00	7,584.00	8 percent

Exhibitions - Inflationary increases for shipping, materials, and supplies place a severe strain on the base resources needed to maintain an active exhibition program. Over the past five years, the inflationary rate for shipping charges has been 8 to 10 percent per year. As an example, transportation of sixteen crates from Washington, D. C. to Miami, Florida, using a climate controlled van, cost the Smithsonian Institution Traveling Exhibition Service (SITES) $2,584 in FY 1985. The same move will cost SITES $2,800 in FY 1986 and $3,000 in FY 1987. Great care is taken in selecting the appropriate materials for exhibition construction. Items such as wallboard, paint and plexiglas continue to witness a steady increase in cost. Certain occasions demand that special lighting be required not only as a comfort for the viewer but as a requirement for a delicate object on display. Frequently, such lamps, exhibiting particular qualities, also are expensive to purchase. The Institution spent over $400,000 for lamps and lighting supplies in FY 1985; the price for this type item continues to increase significantly. The chart below illustrates cost increases for several items used extensively in exhibits preparation:

Exhibition Materials

Item	FY 1985 Cost	FY 1986 Cost	Percentage Increase
Wallboard, 4'x12'x 1/2"	$ 11.76	$ 14.30	22 percent
Tape player, Telex MC11	1,250.00	1,350.00	8 percent
Amplifier, Hafler P500K	349.00	405.00	16 percent
Paint, latex, white, (per gal.)	9.55	13.64	43 percent
Plexiglas:			
4'x8'x1/8", UV3	89.11	127.63	43 percent
4'x8'x1/4", UV3	126.94	181.12	43 percent
4'x8'x1/4", GM, clear	72.49	103.04	42 percent
Fluorescent lamps, F40CW/U/6, each	5.04	6.12	21 percent

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Collections Management - Comprehensive collections management programs, essential to the preservation of the invaluable objects of the Institution, are not immune from inflationary effects and some price increases in this area are expected to be significant.

A large quantity of film is used by the bureaus for various purposes, such as photographing collections and making prints from old negatives. Over $300,000 was expended by the Institution in FY 1985 (to four major suppliers) for camera film, chemicals and associated supplies. A list of additional samples illustrating cost increases for collections management items follows:

Collections Management Equipment and Supplies

Item	FY 1985 Cost	FY 1986 Cost	Percentage Increase
Gatorfoam, 4'x8'x1/2" (protective support for paper items,	$29.85	$46.00	54 percent
Straight jaw locking pliers, 7"	8.75	9.57	9 percent
Straight jaw locking pliers, 10"	9.45	10.25	8 percent
Bristle brush, 38 cm., 15" (for cleaning jars)	13.00	14.50	12 percent
Camel hair brush, 23 cm., 9" (for dusting balances)	4.50	6.50	44 percent
Scalpel blades, pkg. of 100	42.50	54.25	28 percent
Film, 64 ASA, 35 mm. (36 exposures)	4.35	4.56	5 percent
Polycontrast RC paper:			
8"x10" for prints (250 sh.)	55.34	58.10	5 percent
8"x 250' roll	63.77	66.95	5 percent
Blotting paper	.35	.53	51 percent
Drop front print box, 16"x20"x3'	2.75	3.25	18 percent
Matboard, 32"x40", 4 ply	5.00	5.25	5 percent

Facilities Management and Administration - Inflationary increases have occurred in the costs of security and safety items vital to the protection of visitors, collections and staff. It is estimated that $461,000 will be expended in FY 1986 for security systems maintenance and repair, an increase of approximately 19 percent over the cost of similar services provided in FY 1985. Safety glasses provided to workers whose jobs require eye protection are projected to increase in cost by 8 percent in FY 1986. The Office of Protection Services expended approximately $7,200 in FY 1985 for this item.

Charges for data processing software rental and maintenance are projected to increase 30 percent in FY 1986 over FY 1985 costs and computer training costs are expected to increase as well. The Office of Information Resource Management notes that one-week training courses that cost $750.00 per person in FY 1985 are now costing $895.00 in FY 1986, an increase of 19 percent. The following chart indicates price increases in the area of administrative and building maintenance:

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Administrative and Buildings Maintenance Supplies and Contracts

Item	FY 1985 Cost	FY 1986 Cost	Percentage Increase
Plastic bags, 32 gallon	$ 11.90	$ 12.90	8 percent
Envelopes, 8 1/2"x11", per M	19.80	22.50	14 percent
Insecticide, aerosol 12 to cs.	41.85	52.60	26 percent
Disposable coverall, asbestos	76.00	105.00	38 percent
Vacuum, 50 leader	431.00	643.00	49 percent
Trash receptacles	8.80	12.60	43 percent
Lamps:			
Fluorescent, F40W/U/6 (40 watt)	5.04	5.96	18 percent
Incandescent, 75PAR/SP/65WH	4.66	4.92	6 percent
Annual Contracts:			
Trash disposal	38,595.00	42,455.00	10 percent
Uniform purchase and cleaning, (one museum)	7,350.00	8,420.00	15 percent
Word Processor, (one bureau)	1,420.00	1,500.00	6 percent
Pest control, (one museum)	1,881.00	2,069.00	10 percent
NL concentrate, cleaner, 55 gal.	187.00	201.00	7 percent
Combustable waste disposal, (one museum)	15,000.00	19,500.00	30 percent
Elevator maintenance	245,454.00	262,636.00	7 percent
Copier rental & repair, (one machine)	1,575.00	1,720.00	9 percent
Information Handling Service, (microfilm reference documents)	2,268.00	2,791.00	23 percent

The request of a 4.1 percent increase to nonsalary funds is a modest one. The additional proposed resources of $1,590,000 are vital to the integrity of virtually all programs of the Institution and will assist in restoring lost purchasing power due to the effects of inflation.

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OFFICE OF THE ASSISTANT SECRETARY FOR SCIENCE

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS: FEDERAL FUNDS FTE*	FEDERAL FUNDS Amount	UNRESTRICTED FUNDS: General FTP**	General Amount	Special Purpose FTP**	Special Purpose Amount	RESTRICTED FUNDS FTP**	RESTRICTED FUNDS Amount	FEDERAL GRANTS & CONTRACTS FTP**	FEDERAL GRANTS & CONTRACTS Amount
FY 1985 Actual	9	516	1	97	-	62	-	228	3	283
FY 1986 -Base	11	488	1	100	-	1	-	158	17	675
-PL 99-177***		564								
FY 1987 Estimate	11	497	1	101	-	1	2	653	17	1,128

* FTE = Full-time equivalent
** FTP = Full-time permanent positions
*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	11	-	11
11 Personnel Compensation	346	5	351
12 Personnel Benefits	45	1	46
21 Travel	28	1	29
23 Rent, Communications & Utilities	12	-	12
24 Printing & Reproduction	1	-	1
25 Other Services	46	2	48
26 Supplies & Materials	9	-	9
31 Equipment	1	-	1
Total	488	9	497

Analysis of Increase

Necessary Pay	6
Inflation	3

ABSTRACT - The Office of the Assistant Secretary for Science provides guidance, planning and overall policy direction to the Institution's scientific research efforts, and to the science-related education and exhibition activities. No program increase is requested for FY 1987. Necessary pay of $6,000 is required for existing staff and an amount of $3,000 is sought to compensate for the effects of inflation in nonsalary areas of expense.

PROGRAM - The Assistant Secretary for Science is the principal advisor to the Secretary for the coordination and planning of the Smithsonian science activities. The activities reporting to the Assistant Secretary for Science are: the National Museum of Natural History/Museum of Man; the Astrophysical Observatory; the Tropical Research

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Institute; the Environmental Research Center; the National Air and Space Museum; the National Zoological Park; the Office of Fellowships and Grants; and the International Environmental Science Program. The Office provides oversight and administers a number of Trust-funded programs designed to advance Institutional objectives in research. In addition, the Office of the Assistant Secretary for Science serves as the Smithsonian liaison to various prominent national and international research organizations and participates in many national and international boards and commissions.

This Office is responsible for developing guidelines to ensure the superior quality of research conducted at the Institution. This entails providing guidance on shifts of emphasis; recommending new areas for research; and ensuring the access of Science bureaus to state-of-the-art facilities and equipment. In addition, the Office will continue to place attention on efforts to disseminate research findings more effectively to the public and to specialized audiences.

In FY 1986, in response to various national studies, which have indicated the need to improve the quality of present pre-college science and mathematics instruction, the Institution reprogrammed a portion of the monies formerly associated with the Office of Educational Research into other educational and support activities. This decision was based on a careful evaluation of current needs and resources in the context of overall Institutional requirements. Core staff and support (two positions and $84,000) have been retained within the immediate Office of the Assistant Secretary for Science to continue previous studies, and to incorporate the results of these studies into the planning associated with the National Science Resources Center. The Center reflects the common goal of the Smithsonian Institution and the National Academy of Sciences to provide a vehicle which will make science and mathematics instructional resources available to elementary and secondary school teachers throughout the Nation. This effort is in response to various national studies, which have indicated the need to improve the quality of present pre-college science and mathematics instruction.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These funds are provided by annual allotments and are used primarily to support three significant international foundations which operate field research stations used by Smithsonian staff members as well as by the world scientific community: the Seychelles Islands Foundation operates the former Royal Society station on the island of Aldabra, located in the Indian Ocean, where biological research is conducted (estimated expenditures of $15,000 in FY 1986 and in FY 1987); the Charles Darwin Foundation operates a biological research station in the Galapagos Islands (estimated expenditures of $30,000 in FY 1986 and in FY 1987); and the King Mahendra Trust for Nature Conservation provides scholars with access to a unique environment on the Indian sub-continent by operating a field station in the terai region (a low-land, grassy plain) of Nepal where significant ecosystem research is in progress (estimated expenditures of $10,000 in FY 1986 and in FY 1987). Smithsonian support facilitated the continued accessibility of these areas for the research community at large. Support also is provided for the exchange of scholars and scientific information between the Smithsonian and a number of nations, principally, the People's Republic of China and Cuba (estimated expenditures of $20,000 in FY 1986 and in FY 1987).

Restricted Funds - These consist of restricted endowments, gifts and grants from individuals, foundations and corporations which specify the use of the donation or bequest. Contributions from various sources provide support to the Galapagos Islands for the continuation of conservation and science activities (estimated expenditures of $50,000 in FY 1986 and in FY 1987). Competitive awards are made to Smithsonian units from the Seidell Endowment Fund, administered by this Office, which provides for dissemination of scientific information (estimated expenditures of $75,000 in FY 1986 and in FY 1987). The FY 1985 awards from the Seidell Endowment are reflected in the expenditures of the recipient organizations.

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Federal Grants and Contracts - Contract funds have been provided by the Office of Naval Research for the continuation of studies in the area of manpower research and development (estimated expenditures of $225,000 in FY 1986 and $228,000 in FY 1987). Grant and contract support originally anticipated for programs of the National Science Resources Center (estimated expenditures of $450,000 in FY 1986 and $900,000 in FY 1987) will more likely be reflected in expenditures beyond 1987.

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NATIONAL MUSEUM OF NATURAL HISTORY/MUSEUM OF MAN

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS: FEDERAL FUNDS FTE*	FEDERAL FUNDS Amount	UNRESTRICTED FUNDS: General FTP**	General Amount	Special Purpose FTP**	Special Purpose Amount	RESTRICTED FUNDS FTP**	RESTRICTED FUNDS Amount	FEDERAL GRANTS & CONTRACTS FTP**	FEDERAL GRANTS & CONTRACTS Amount
FY 1985 Actual	505	20,194	-	65	-	1,791	7	1,691	36	1,949
FY 1986 -Base	510	21,104	-	10	-	226	7	1,690	37	1,754
-PL 99-177***		20,268								
FY 1987 Estimate	510	21,888	-	10	-	231	7	3,623	36	1,546

* FTE = Full-time equivalent

** FTP = Full-time permanent positions

*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	510	-	510
11 Personnel Compensation	15,340	251	15,591
12 Personnel Benefits	1,776	36	1,812
21 Travel	164	97	261
22 Transportation of Things	39	8	47
23 Rent, Communications & Utilities	82	3	85
24 Printing & Reproduction	273	86	359
25 Other Services	2,115	215	2,330
26 Supplies & Materials	655	36	691
31 Equipment	660	52	712
Total	21,104	784	21,888

Analysis of Increase

Necessary Pay	287
Inflation	167
Program Funds	330

ABSTRACT - The National Museum of Natural History/Museum of Man (NMNH/MOM) houses one of the world's largest and most valuable compilations of scientific collections, and is actively engaged in the care and conservation of its collections, research in the natural and physical sciences, and the provision of services to the Museum's many visitors. In addition, the NMNH/MOM conducts special programs designed for various groups including the young, the aged, and the disabled. The success of these programs is given ample testimony by the nearly six million visitors who enjoyed the Museum in 1985. For FY 1987, an increase of $330,000 is requested to conduct research on the biological diversity of South America. Necessary pay of $287,000 is requested for existing staff and an amount of $167,000 is sought to compensate for the effects of inflation in non-salary areas of expense.

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PROGRAM - The collections of the National Museum of Natural History/Museum of Man, which contain approximately 100 million specimens of plants, animals, fossils, rocks, minerals and man's cultural artifacts, have proven essential to the Nation's scientific community by providing fundamental documentation for the study of man, and the flora, fauna and geology of our planet and outer space. In 1985, more than a half-million specimens were added to the collections through gifts, purchases, expeditions of Museum scientists, and deposits from other government agencies. The Museum is responsible by law (20 U.S.C. 59) to serve as the ultimate repository for the collections of natural history, archeology and ethnology gathered by U.S. Government agencies. In addition, NMNH/MOM provides laboratory space and research facilitation to 80 scientists in affiliated Federal agencies with natural history missions (United States Department of Agriculture, National Marine Fisheries Service, Fish and Wildlife Service, National Institutes of Health, and the United States Geological Survey).

Research - Scientific research and the publication of scientific findings are fundamental to the mission of the Museum. To this end, NMNH/MOM encourages the use of its collections for scientific pursuits. In 1985, more than 1,000 scholars from throughout the world used the Museum's collections, and over 370,000 specimens were loaned to the world scientific community.

The Museum staff of 120 scientists is engaged in hundreds of field expeditions and laboratory-based research projects. Research at NMNH/MOM results in nearly 500 books, major scientific papers and articles published every year. Recent publications include a centennial volume assembled by Museum volcanologists on the 1883 eruption of Krakatau; "Arctic," the sixth volume of the 20-volume Handbook of North American Indians; and the first modern and complete treatise on the grasses of southeastern Brazil. This three-volume treatise should prove essential to Latin American institutions concerned with agricultural development. An illustrated field guide to the ferns of the United States and Canada was published in 1985. Treating over 400 species, this guide is the first complete one of its kind in North America.

Data amassed by the Museum often proves essential to the research of scientists outside the Institution. Since 1972, the Museum's Marine Mammal Salvage Program has been collecting data and specimens of marine mammals stranded on the U.S. Atlantic coast. This project has yielded an enormous amount of data on many species of whales and porpoises. Specifically, this data pertains to migratory patterns, the size of populations, and eating and breeding habits. In 1984, a team of scientists from U.S. Federal agencies and universities, using computerized statistics and specimens from the Museum, hypothesized that whales, dolphins and other marine mammals have sensitive magnetic systems which enable them to navigate ocean "highways" guided by magnetic lane markers in buried rocks, and that coastal magnetic anomalies often result in mass beachings of the animals. If this theory is correct, the findings may eventually enable scientists to predict whale migratory routes. With this information, it is hoped that scientists will eventually be able to locate the animals at sea and redirect schools to avoid mass strandings.

Museum researchers also provide important assistance to the international scientific establishment. For example, erosion of the Nile Delta has increased alarmingly since the construction of the Aswan High Dam. This bodes ill for Egyptian agricultural and fishery production, and for the operation of the Suez Canal. In 1984 and 1985, a Museum oceanographer, in cooperation with the Egyptian Coastal Research Institute, began taking soil borings in the Lake Manzeleh and eastern Delta area to measure past coastal change. The data amassed will be utilized by the Egyptian government to intervene and minimize future damage to the coast.

A base increase of $260,000 was received in FY 1985 and an additional amount of $140,000 in FY 1986 was received to begin a long-term program of upgrading and replacing critically needed scientific equipment. In FY 1985, NMNH/MOM replaced a defunct

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Scanning Electron Microscope (SEM) with a new higher resolution SEM. An X-ray diffractometer system, which facilitates basic structural research on finely crystalline materials, was purchased. In addition, many less expensive pieces of equipment have been replaced under this program.

In FY 1985, funding also was provided for two important research projects. An increase of $175,000 is enabling the Museum to expand its comprehensive survey of the barrier reef ecosystems from Carrie Bow Cay, Belize, to other Caribbean sites. Reefs off the Yucatan coast of Mexico, Barbados, Martinique, Guadeloupe, and southern Florida are now under consideration. A second increase of $175,000 is funding a major new project in global volcanism. Tectonic and chemical information will be added to the Museum's existing global volcanism data banks. This information will then be made directly accessible to scientists at the Smithsonian and elsewhere through a microcomputer network.

Collections Management - Collections Management underpins the Museum and its functions. New acquisitions and care of the old insure the increasing importance of the collections. In 1985, the NMNH/MCM purchased one of the premier collections of New World tropical butterflies. This acquisition, containing more than 100,000 specimens, including many rarities and new species and subspecies, is of inestimable scientific value. Another unique research collection acquired in 1985 consists of 5,000 specimens of Dominican amber containing 10-million-year-old fossil insects. The rarity, numbers, quality of preservation, and diversity of the New World fossil insect fauna trapped and preserved in these specimens of fossil resin are unmatched in any museum or private collection. The study of this collection should provide many new insights into insect evolution. Integrating this material, and the more than 589,000 other specimens acquired in 1984, into the main body of the Museum collection will be one of the major tasks of the Museum's Collections Management staff.

As the irreplaceable collections of the Museum age, increasing attention is being devoted to managing and conserving these collections to prevent a diminishment in their scientific or exhibit value. This process is being greatly facilitated by the inventory of Museum holdings and the pending move of major portions of the collections to the Museum Support Center in Suitland, Maryland. Work is under way in each of the Museum's seven scientific departments to document materials for the move, to reconcile move records with the inventory records, and to clean and prepare specimens for relocation.

Outreach - Among the important 1985 Evans Gallery shows was "Aditi: A Celebration of Life," which featured 1,500 objects of folk art from the many cultures of India and demonstrations by Indian artists and artisans. Produced in conjunction with the Smithsonian's Festival of American Folklife, "Aditi" was cited by The New York Times as one of the most memorable exhibitions of the year.

A living microcosm of the rocky coast, complete with mussels, lobsters, kelp, and electronically and mechanically controlled waves and tides, opened in 1985 in the Museum's Sea Life Hall. The microcosm was developed by the same Smithsonian scientific team that five years ago developed the Museum's living coral reef microcosm. Located side-by-side, the two 3,000-gallon aquarium systems serve a dual purpose: as exhibits of living ecosystems, they demonstrate to the public the dynamics of contrasting warm and cold water coastal environments; and as research laboratories, they aid museum scientists working to improve our understanding of natural marine environments and to develop techniques for farming the sea and purifying polluted waters.

To celebrate its 75th anniversary, the Museum opened "The Magnificent Voyagers" in November 1985. This major, year-long exhibition commemorates the U.S. Exploring Expedition of 1838-1842, which was led by Lieutenant Charles Wilkes. The Wilkes expedition mapped and surveyed the South Pacific and confirmed, for the first time, the

existence of Antarctica as a continent. This exhibition is particularly appropriate as the vast material assembled during the expedition formed the nucleus of the Smithsonian's scientific collections. To supplement the exhibition, the Museum's Office of Education is presenting a variety of related activities including a symposium, scholarly and popular lectures, films, dance performances and an educational packet. The exhibition will travel to major museums and historical societies across the United States after its closing in Washington, D. C.

The Museum's Education Office and its staff of about 300 volunteer docents continue to be very successful in reaching a large number of visitors with a variety of tours and learning experiences. During the past year, a new series of instructional charts on plant and animal identification was initiated. These posters are of great use in classrooms, clubs, nature centers, libraries and homes. Furthermore, the Office held a Natural Science Symposium for 400 greater Washington metropolitan area high school science students and their teachers in 1985. The program featured a seminar by guest speakers, discussion sessions, films, and tours behind the scenes to expose the students to state-of-the-art research in natural history.

EXPLANATION OF PROGRAM INCREASE - Research ($330,000) - Funding is sought in FY 1987 to expand Smithsonian research on biological diversity and on the roots of human culture in South America. The biological diversity of the earth is diminishing at an exponentially increasing rate. This alarming trend is particularly evident in the tropics where plant and animal life are the richest. A series of multidisciplinary and integrated biological diversity studies will be initiated to collect specimens and record the coexistence of species in the arc along the western and northern Amazon Basin, along the flank of the Andes and eastward across the land of the Tapuia and throughout the Guianas where accumulating evidence indicates that the major center of biological diversity on Earth is to be found. It is expected that thousands of new plant species, hundreds of new animal species and tens of thousands of new insect species will be discovered. These studies will result not only in greater understanding of biological diversity, but in the potential use of hundreds of these new organisms as biological control agents, food for indigenous peoples, and germplasm resources. The studies also will explore the origin of human culture and the towering influence of the physical environment upon the evolution of human culture in this region of South America.

To better ensure the success of this endeavor, the requested funding of $330,000 will be devoted to establishing a well coordinated and technically advanced research effort. Teams of researchers will document activities and analyze data derived from the collections of the Museum to produce scholarly natural history base-line books and technical publications ($75,000); and to develop and promote international cooperation between Smithsonian and tropical Latin American scientists, which will include the establishment of an International Symposia series on the biological diversity of tropical systems ($96,000). Support funding requested will fund fellowships for students to participate in the research effort ($30,000); travel to collect specimens and conduct field-based research in South America as well as to other museums to study historical materials ($90,000); and transportation of specimens, basic supplies, and equipment ($39,000).

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These funds are derived from a variety of sources, including allotments, the Museum's share of net proceeds from the Museum shop, cafeterias and other receipts such as sale of exhibit brochures, the "By-Word" exhibition explanation system, and tuition reimbursement grants from local universities for courses taught by Museum staff. Program allotments provided support for the Watmore research project on birds (actual expenditures of $29,000 in FY 1985), and events related to the opening of new exhibitions. Special Purpose funds are used to help finance exhibit hall brochures, field research, audio-visual equipment for exhibit halls,

training for anthropology students, research in paleontology, and support for the Anthropological Archives.

In addition, funds from the Institution's Collections Acquisition, Scholarly Studies and Educational Outreach Program, Research Opportunities Fund, Smithson Society, and the Special Exhibition Fund support research, education and exhibition projects. In FY 1985, the total funding from these programs amounted to $1,514,000, providing various levels of support for over 100 projects. Expenditures under these programs have not been recorded for FY 1986 and FY 1987 which explains the variance in totals shown between FY 1985 and the subsequent two years.

Restricted Funds - These are in the form of restricted endowments which specify the use of the donation or bequest and of gifts and grants provided by individuals, foundations or corporations for specific purposes. Generally, the funds provide support for a particular exhibition or research project. Among the restricted funds are monies for field based and laboratory research on the physical and chemical mechanisms underlying geologic and cosmologic processes (estimated expenditures of $53,000 in FY 1986 and $50,000 in FY 1987), and biological studies of mangrove swamps (estimated expenditures of $26,000 in FY 1986 and in FY 1987). Other funding is available for ethnological research among the Canela Indians of Brazil (estimated expenditures of $37,000 in FY 1986 and $40,000 in FY 1987); for support of the marine mammal alert events program (estimated expenditures of $20,000 in FY 1986 and $21,000 in FY 1987); support of the graduate fellowships for marine systems research (estimated expenditures of $31,000 in FY 1986 and $26,000 in FY 1987); and support for threatened Latin American plants (estimated expenditures of $30,000 in FY 1986 and $35,000 in FY 1987). Gifts have been received and continue to be sought for upgrading the Gem and Mineral Hall. The Museum received funds for the "Man Makes Culture Makes Man" exhibition (estimated expenditure of $77,000 in FY 1986). Funds were received toward production of "The Magnificent Voyagers" exhibition which features materials gathered by the Wilkes Expedition (estimated expenditure of $31,000 in FY 1986), and "The Nature Paintings of Robert Bateman" exhibition (estimated expenditures of $11,000 in FY 1986 and $63,000 in FY 1987). The Museum continues to seek support from private sources for its planned exhibitions. Currently, funds are being sought for four temporary shows: "Crossroads of Continents" (estimated expenditures of $255,000 in FY 1986 and $500,000 in FY 1987); "Ebla to Damascus" (estimated expenditure of $258,000 in FY 1987); "Man, Music and Motion" (estimated expenditure of $850,000 in FY 1987); and "Caesarea by the Sea" (estimated expenditure of $100,000 in FY 1987), all to be installed in the Evans Gallery.

In FY 1982, the Museum undertook the management of the Smithsonian Marine Station at Link Port, Florida (formerly called the Fort Pierce Bureau), as an integral part of its marine research program. The Hunterdon Endowment is used to support oceanographic research at this facility, located on the central east coast of Florida, a biotic and oceanographic transitional zone offering an unrivaled opportunity for study of a unique complex of both temperate and tropical plants and animals. Research here focuses on the life history, systematics and ecology of a wide spectrum of plant and animal marine life. Contributing to the research efforts are a resident scientist, Smithsonian visiting scientists, postdoctoral fellows and numerous national and international visiting investigators (estimated expenditures of $480,000 in FY 1986 and $493,000 in FY 1987). Support also is provided by the Seward Johnson Endowment Fund for operation and maintenance of the Johnson-Sea-Link submersible program conducted at the facility by the Harbor Branch Foundation (estimated expenditures of $525,000 in FY 1986 and $472,000 in FY 1987).

The Museum also has several other restricted funds, each one with anticipated expenditures of less than $20,000 in FY 1986 and FY 1987.

Federal Grants and Contracts - These funds are provided by various Federal agencies and departments for special projects which can be conducted at the Museum because of its

unique scientific expertise in certain fields. Examples of Federal contract support are an Agency for International Development grant for the study of aquaculture farming in the Caribbean (estimated expenditures of $752,000 in FY 1986 and $283,000 in FY 1987); projects funded by the United States Army to conduct basic biosystematic research on mosquitoes that are of medical significance overseas (estimated expenditures of $91,000 in FY 1986 and $87,000 FY 1987); creation of a computer data file on the medical importance, distribution, ecology and collection of mosquitoes (estimated expenditures of $115,000 in FY 1986 and $121,000 in FY 1987); the "Tumor Registry in Lower Animals" project funded by the National Cancer Institute that facilitates the study of neoplasia and related disorders in invertebrate and cold-blooded vertebrate animals important in human biomedical research (estimated expenditures of $359,000 in FY 1986 and $430,000 in FY 1987); a project funded by the National Science Foundation to process and distribute polar biolog-ical specimens and data (estimated expenditures of $170,000 in FY 1986 and $233,000 in FY 1987); and funds to curate material collected during the Bureau of Land Management's outer continental shelf biological sampling program in the Atlantic and Gulf regions (estimated expenditures of $166,000 in FY 1986 and $180,000 in FY 1987).

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SMITHSONIAN ASTROPHYSICAL OBSERVATORY

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
			General		Special Purpose					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1985 Actual	98	8,446	43	2,310	33	1,718	1	268	104	12,598
FY 1986 -Base	97	8,696	43	2,377	2	538	1	279	102	12,058
-PL 99-177***		8,349								
FY 1987 Estimate	97	9,291	43	2,467	2	594	1	194	96	12,147

* FTE = Full-time equivalent
** FTP = Full-time permanent positions
*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	97	-	97
11 Personnel Compensation	4,328	47	4,375
12 Personnel Benefits	463	7	470
21 Travel	111	5	116
22 Transportation of Things	40	2	42
23 Rent, Communications & Utilities	406	257	663
24 Printing & Reproduction	55	2	57
25 Other Services	1,469	200	1,669
26 Supplies & Materials	256	10	266
31 Equipment	1,568	65	1,633
Total	8,696	595	9,291

Analysis of Increase

Necessary Pay	94
Inflation	161
Program Funds	150
Rent	230

ABSTRACT - The Smithsonian Astrophysical Observatory (SAO), located in Cambridge, Massachusetts, is engaged in basic astrophysical research in the following interrelated disciplines: atomic and molecular physics, high energy astrophysics, optical and infrared astronomy, planetary sciences, radio astronomy and geoastronomy, solar and stellar physics, and theoretical astrophysics. SAO cooperates in its scientific programs with the Harvard College Observatory (HCO), and together the two observatories form the Center for Astrophysics (CfA). SAO also operates the Fred Lawrence Whipple Observatory (FLWO) on Mt. Hopkins, Arizona, the site of the Multiple Mirror Telescope (MMT), a joint project with the University of Arizona.

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Scientific data are obtained from laboratory experiments conducted in Cambridge; telescopic observations, especially at FLWO; and space observations utilizing satellites, rockets and balloons. The reduction and analysis of these data are performed mostly with SAO's computer systems in Cambridge. The resulting astrophysical information and scientific interpretations are published in scientific journals and reports. These results also are conveyed to the scientific community and to the public through lectures and more general articles and books. For FY 1987, an increase of $150,000 is requested to initiate instrument development in the new field of submillimeter-wave astronomy. Necessary pay of $54,000 is required for existing staff and an amount of $161,000 is sought to compensate for the effects of inflation in nonsalary areas of expense. A further amount of $230,000 for increased rental costs is being requested here and justified in the Uncontrollable Increases Section of this budget.

PROGRAM - Founded in 1890 by Samuel Pierpont Langley, the third Secretary of the Institution, the Smithsonian Astrophysical Observatory has become a leading international center for astrophysics. Past achievements include Langley's own pioneering studies of solar terrestrial relationships; the establishment of a worldwide satellite tracking network at the dawn of the Space Age; the development of the Multiple Mirror Telescope; and the landmark survey of galactic redshifts. SAO's current leadership in astrophysics is based in part on its diversified approach to research, including the varied interests of the staff and its technological capabilities to create new research tools. Although the research programs are divided among seven disciplines, efforts are integrated so that the results in one field often complement those in another.

Because of its location outside the Washington metropolitan area, SAO has several administrative support units funded by Federal funds and by indirect charges to grants and contracts. In addition, SAO maintains an engineering department, a computer facility, and an extensive astronomical library.

The major accomplishments of SAO are published in scientific journals by individual staff members. Approximately 200 such papers appear each year. A brief summary of the research conducted in each of SAO's seven science divisions follows. In each case, the first paragraph describes the research program in general terms with the subsequent paragraphs describing recent accomplishments.

Atomic and Molecular Physics - Most techniques for interpreting observations of astronomical objects require quantitative information about atomic and molecular processes. Accurate determination of physical conditions in these objects depends directly upon the precision and completeness of the underlying atomic and molecular data. The major objective of this research is to obtain such data from combinations of laboratory and theoretical studies.

Laboratory measurements were completed on the effect of atmospheric pressure on the millimeter-wave radiation of ozone. These results, when combined with ground-based measurements of radiation from ozone in the stratosphere, allow the distribution of ozone with altitude above the Earth to be deduced. Ozone was chosen as the first test gas in the laboratory program because of the critical role it plays in sustaining life on Earth. Other trace gases important in maintaining the chemical balance will now be studied. For example, work on hydrogen peroxide is planned for FY 1987.

Large-scale computing is fundamental for progress in theoretical studies in atomic and molecular physics. During FY 1985, substantial progress was made in meeting SAO's computing needs: an IBM 4381 computer was installed for making calculations in quantum chemistry and effective ways were established to interact with national supercomputers. These new computer resources should enable SAO to investigate a number of systems containing many atoms which are of importance for an understanding of planetary atmospheres and the interstellar medium.

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High Energy Astrophysics - Research in high energy astrophysics is concentrated on those astronomical objects that emit a substantial fraction of their energy in X-rays. Since X-rays are absorbed by the Earth's atmosphere, observations must be made from balloons, rockets, the Space Shuttle, or satellites. Scientific studies are directed at a broad range of topics including the processes for generation of radiation in the X-ray band, the amount of matter in the universe, and the origin, development and ultimate fate of the universe. SAO scientists and engineers also are developing new instrumentation to carry out future space science missions.

Analysis of data fr m the HEAO-2 (Einstein Observatory) satellite revealed the existence of hot, gaseous, X-ray emitting haloes associated with many elliptical and other early-type galaxies. Using this X-ray emitting gas to trace the underlying distribution of matter has led to the important conclusion that many of these galaxies have very massive haloes composed of dark matter of an unknown nature. This work resulted in the award of the first Rossi Prize by the American Astronomical Society to two SAO scientists.

The National Aeronautics and Space Administration is supporting SAO's development of a high resolution camera, as well as SAO's scientific guidance for an imaging telescope, both proposed for the Advanced X-ray Astrophysics Facility (AXAF), a great observatory to be placed in space in the 1990s to scan the X-ray sky as the Hubble Space Telescope will scan the optical sky. SAO scientists also are developing a novel Normal Incidence X-ray Telescope, for high resolution imaging of the solar disk from a sounding rocket, and an X-ray balloon experiment, called the Energetic X-ray Imaging and Timing Experiment (EXITE), to make high-sensitivity measurements of unusual sources of X-rays and gamma-rays in the universe.

Optical and Infrared Astronomy - Research in optical and infrared astronomy concentrates on extragalactic and galactic astronomy, with special emphasis on studies of clusters of galaxies, clusters of stars, and the formation and evolution of stars. In support of this and other research, SAO operates the Fred Lawrence Whipple Observatory (FLWO) on Mt. Hopkins, Arizona, the site of the Multiple Mirror Telescope (MMT), operated jointly with the University of Arizona.

In a study of fundamental importance, SAO scientists showed that our understanding of the large-scale structure of the universe has been flawed by errors in the classic map of how faint galaxies are distributed on the sky. Much of the theoretical work based on the older data, obtained by others, may prove to be invalid, with important consequences for theories of the early history of the universe. SAO scientists initiated a major new survey of galaxies to address this problem, using modern CCD (charge-coupled devices) detectors and digital image processing techniques.

A systematic survey of the distances to galaxies led to the discovery of a new gravitational lens in the Constellation Pegasus which is apparently serving as a "cosmic magnifying glass" to greatly enhance the image of a much more distant quasar. According to Einstein's General Theory of Relativity, if a massive object is positioned between an observer and a distant quasar, the light from that quasar will be deflected, or bent, by the object's gravitational field and will form one or more images. In this case, a team of SAO scientists using both conventional instruments and the MMT identified the lens as a 15th magnitude spiral galaxy on a line directly between the Earth and a previously unidentified quasar at an apparent distance of 1,800 Megaparsecs (about 1 billion light years).

The Small Helium-Cooled Infrared Telescope (IRT) — a joint project of SAO, the University of Arizona, and the Marshall Space Flight Center — orbited the Earth as one of 13 experiments on Spacelab II aboard the Space Shuttle in July 1985. The telescope made an all-sky survey and searched for new sources of diffuse infrared radiation.

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In FY 1985, work was completed on the first of the MMT mirrors to be refinished to the much finer optical quality required to take full advantage of the excellent characteristics of Mt. Hopkins for astronomical imaging. The rest of the six primary mirrors will be refinished sequentially.

The scientific activities of the FLWO are supported by administrative, motor pool, and public information services located in a rather dilapidated base camp in Amado, Arizona, 18 miles away. Site selections for a new base camp have been made and an architectural firm is preparing design, engineering, and environmental impact studies. Legislation to authorize construction of this new base camp has been approved by the House of Representatives (H.R. 1483) and is pending in the Senate (S. 581).

Planetary Sciences - Research in Planetary Sciences strives to understand the planets, satellites, and small bodies of the solar system; and the processes that created them from gas and dust billions of years ago. Optical observations of newly discovered, faint, or unusual minor planets and comets are performed at the Oak Ridge Observatory in Massachusetts and are closely coordinated with the International Astronomical Union's Minor Planet Center and Central Bureau for Astronomical Telegrams, both operated by SAO.

Preliminary computer simulations by SAO scientists of the infall of interstellar gas and dust that gave rise to the solar system suggest that the millimeter-size spherules abundant in certain meteorites were produced when infalling aggregations of presolar dust were heated sufficiently by aerodynamic drag to melt. If supported by more detailed analysis, this idea may provide the solution for this nearly century old puzzle.

One SAO scientist participated this year in an expedition to Antarctica to collect geologic samples across the contact zone between sediments of the Cretaceous and Tertiary eras of the Earth's history and to analyze these samples for meteoritics elements and other types of evidence that would indicate whether a gigantic impact event occurred that might have extinguished the dinosaurs.

Radio Astronomy and Geoastronomy - Research in radio astronomy concentrates on understanding the structure, evolution, sources of energy, and ultimate fate of radio wave-emitting astronomical objects distributed throughout the universe. SAO scientists also are pioneering in the use of radio astronomy techniques to measure the contemporary drifts among the continents. Other scientists are developing atomic clocks, testing the theory of general relativity, and formulating uses for long tethers in space.

Very-long-baseline-interferometry (VLBI) observations of molecular water-vapor maser sources associated with star-forming regions in our galaxy allowed SAO astronomers to determine precisely the distances to these young objects and, by implication, to calculate more accurately the size of our galaxy, a basic parameter of the universe.

Using radio tracking of the Pioneer Venus Orbiter, SAO scientists mapped small irregularities in the gravitational potential of Venus. These irregularities were compared to the topography on Venus to determine the subsurface structure of the planet. Since Earth resembles Venus more than any other planet, an understanding of the near surface structure of Venus helps both to develop and to test theories that describe such important terrestrial phenomena as earthquakes, volcanoes, and the formation of mineral deposits.

A new generation of satellite-borne maser "clock" is under development for use in space and for sub-nanosecond worldwide timing. The present stability of these clocks is equivalent to the loss of no more than one second in 100 million years. Operating hydrogen maser clocks at temperatures very near absolute zero suggests that the stability could be improved one hundredfold. SAO has nearly completed development of the first such maser clock.

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Solar and Stellar Physics - Research in solar and stellar physics is directed principally towards understanding the physical processes operating in the Sun and stars. Stars like the Sun are studied in order to increase understanding of the dependence of their properties on age, on composition, and on their physical associations in pairs and in groups.

A new computer program was completed by SAO scientists to analyze the outflow of mass from giant stars that are observed to be losing mass about ten million times faster than our Sun. In the coming years, this program will be used to analyze observations taken at the FLWO and by satellites in space.

New instrumentation and diagnostic techniques also are being developed to determine the physical processes responsible for producing the solar wind. SAO's ultraviolet coronal spectrometer, which has already provided the first measurements of temperature and outflow velocity in the solar wind source region, is now being prepared for deployment and retrieval by the Space Shuttle in 1986. SAO also is helping to define the characteristics of an instrument for the European Space Agency's Solar Heliospheric Observatory; measurement of the solar wind source region with this instrument, which SAO hopes to build, should provide a link between traditional observations of the solar corona and in situ measurements of the solar wind far from the Sun.

Theoretical Astrophysics - Theoreticians study astronomical systems by means of physical analysis and mathematical modeling. A broad range of topics are investigated, including the interiors of neutron stars, the properties of atoms and molecules in interstellar space, the formation of spiral structure in galaxies, high temperature plasmas, and the formation of planets in the early solar system.

One noteworthy example of theoretical research concerned globular clusters, those beautiful astronomical objects that contain about a million stars in a roughly spherical shape. Relatively sparse in their outer layers, they become quite dense in the center. In fact, the gravitational encounters between stars at the center should lead to "core collapse." Since many of the clusters now seen must have already undergone collapse, some unknown phenomenon may prevent real catastrophe. Until now it has been impossible to describe theoretically even how a cluster should look after collapse; but a computer simulation of both collapse and post-collapse phases was devised this year by an SAO scientist. This theoretical model is consistent with the observed properties of clusters and should help future research focus on the mysterious factors that allow clusters to survive this cosmic cataclysm.

Education Program - SAO conducts regular programs of public information and education, including popular lectures, "Observatory Nights for the Public" in Cambridge, and guided bus tours of the Whipple Observatory in Arizona.

EXPLANATION OF PROGRAM INCREASE:

Research: Submillimeter-Wave Astronomy ($150,000) - For FY 1987, an increase of $150,000 is requested to initiate instrument development in the new field of submillimeter-wave astronomy. The last frontier for ground-based astronomy consists of observing the skies with telescopes sensitive to submillimeter waves, light with wavelengths between those of infrared and radio waves. The formation of stars and planetary systems and the puzzling processes taking place in the cores of galaxies and quasars can best be studied at submillimeter wavelengths. Technology has only just advanced to the point where two critical requirements for such telescopes can be met: (1) large and precisely finished surfaces to focus the submillimeter waves effectively and (2) sensitive and efficient devices to detect the focused submillimeter waves.

The development SAO is now proposing will allow it to use existing telescopes to

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work at submillimeter wavelengths. Observations at submillimeter wavelengths made on such telescopes will be of unquestioned scientific importance. Moreover, this new field affects research programs in all of SAO's divisions, and scientists from each would be involved in the research made possible by this proposed development.

Specific scientific projects that would be possible include the study of: (1) the composition and evolution of the surfaces of the terrestrial planets, as well as the composition of, and, to a certain extent, the chemical processes taking place in, planetary atmospheres. In addition, the abundance of molecular constituents in the central regions of comets could be probed effectively; (2) the formation and interaction of molecules in interstellar space under conditions not achievable in terrestrial laboratories. The insights gained are not only of interest for understanding the birth of stars and the characteristics of the interstellar medium, but could conceivably lead to important chemical applications on earth; (3) the distribution of dust in galaxies and the role of such dust in star formation. Because of its low temperature, dust is especially amenable to study at submillimeter wavelengths; (4) the structure of galaxies through the measurement of the distributions of certain molecules that seem to trace out the locations of most of the mass in galaxies; and (5) quasars whose sources of enormous energy remain an outstanding enigma. Submillimeter observations can penetrate deeply into the heart of quasars and provide powerful discriminants to distinguish among various theories proposed to explain the source of the power radiated by these objects.

Greater return from submillimeter observations will be achieved when they can be made at far higher angular resolution so as to reveal enormously more detail than the existing or planned single telescopes will allow. In a separate, but related, initiative SAO wishes within the next few years to take this next step toward significantly increased resolution by beginning construction of a pioneering array of submillimeter telescopes designed to achieve arcsecond resolution--more than a factor ten greater than achievable with single telescopes.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - Unrestricted general funds come primarily from overhead charged on contracts and grants. These funds are used to support administrative positions and some of the other administrative costs of SAO. Special Purpose funds come primarily from two sources: external users of SAO's Computer Center and the Institution's Trust funds, with the vast majority being from the latter. The former may be used for research purposes and for computer related purchases in future years. By far the largest special purpose fund is the Fellowships and Visiting Scholars program (estimated expenditures of $330,000 in FY 1986 and $400,000 in FY 1987).

In FY 1985, funds from the Institution's Collections Acquisition, Scholarly Studies and Educational Outreach Program ($198,000), Smithson Awards ($3,000) and Research Opportunities Fund ($43,000) were used to support various research projects. Also included are expenditures from SAO computer cost centers ($1,019,000). Expenditures for these programs and services have not been recorded for FY 1986 and FY 1987 which explains the difference between those years.

Restricted Funds - Restricted funds consist of restricted endowments, gifts and grants from individuals, foundations, organizations or corporations which specify funds for a particular project. Restricted Endowment Funds provide support for studies in various physical sciences (estimated expenditures of $111,000 in FY 1986 and $73,000 in FY 1987). A grant from the Chemical Manufacturers Association assists SAO in studies of the chemical balance of halogens and ozone in the stratosphere (estimated expenditures of $104,000 in FY 1986 and $102,000 in FY 1987).

Federal Grants and Contracts - SAO receives a majority of its funding through Federal agency grants and contracts for research. This research is often carried out in

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cooperation with both governmental and academic institutions in the United States and abroad. Funding is received from Federal agencies, such as NASA, the Naval Research Laboratory and the Air Force, to support specific projects in areas of SAO's expertise (estimated expenditures of $12,058,000 in FY 1986, and $12,147,000 in FY 1987).

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SMITHSONIAN TROPICAL RESEARCH INSTITUTE

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS: FEDERAL FUNDS FTE*	FEDERAL FUNDS Amount	UNRESTRICTED FUNDS: General FTP**	General Amount	Special Purpose FTP**	Special Purpose Amount	RESTRICTED FUNDS FTP**	RESTRICTED FUNDS Amount	FEDERAL GRANTS & CONTRACTS FTP**	FEDERAL GRANTS & CONTRACTS Amount
FY 1985 Actual	88	3,554	2	148	-	481	-	338	-	4
FY 1986 -Base	87	3,798	2	124	-	211	-	339	-	-
-PL 99-177***		3,643								
FY 1987 Estimate	87	4,243	2	133	-	233	-	330	-	-

* FTE = Full-time equivalent

** FTP = Full-time permanent positions

*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	87	-	87
11 Personnel Compensation	2,314	53	2,367
12 Personnel Benefits	516	7	523
21 Travel	70	33	103
22 Transportation of Things	15	18	33
23 Rent, Communications & Utilities	28	1	29
24 Printing & Reproduction	38	31	69
25 Other Services	238	124	362
26 Supplies & Materials	326	65	391
31 Equipment	253	113	366
Total	3,798	445	4,243

Analysis of Increase

Necessary Pay	60
Inflation	40
Program Funds	345

ABSTRACT - The Smithsonian Tropical Research Institute (STRI), located in the Republic of Panama, serves as the Nation's leading international center devoted to research in tropical biology and conducts basic research in ecology, behavior, and evolution. These research programs are complemented by carefully selected applied studies with a common theme of "Alternatives to Destruction" (providing an environmentally and economically valid substitute for the traditional clearing of forest for conventional agriculture). In addition to STRI staff, scientists throughout the world researching tropical biology use STRI facilities for their fieldwork. Audio-visual and other educational materials on conservation and environmental education, developed by STRI, are distributed to both the local community and internationally. Under the terms of the Panama Canal Treaty of 1979, STRI has been designated the custodian of the Barro

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Colorado Nature Monument, a 12,000-acre tropical nature preserve (consisting of Barro Colorado Island and five adjacent peninsulas in Gatun Lake) located in the Panama Canal. Other STRI research facilities include a marine laboratory at Naos Island (on the Pacific Ocean); a marine laboratory at Galeta Point and a field station in the San Blas Islands (on the Atlantic Ocean); and a research library, laboratories, conference and study facilities, and administrative headquarters in Panama City. For FY 1987, an increase of $345,000 is requested to expand STRI's research in tropical forest biology. Necessary pay of $60,000 is required for existing staff and an amount of $40,000 is sought to compensate for the effects of inflation in nonsalary areas of expense.

PROGRAM - The Smithsonian Tropical Research Institute is the Nation's leading international center for the advancement of basic research in tropical biology. STRI performs at least four major functions as it strives to expand the horizons of tropical biology. Its professional staff conducts fundamental research on the ecology, evolution and behavior of tropical plants and animals, including mankind; provides major facilities for the international scientific community to study both terrestrial and marine tropical biology; is deeply committed to environmental education and to conservation of tropical ecosystems; and has the responsibility to protect and manage the Barro Colorado Nature Monument.

The accomplishments of STRI's programs in fundamental research, logistical support to visiting scholars and students, and conservation and environmental education continue at a high level. Current research projects are summarized in an annual report, STRI Contributions to Research, which is distributed to appropriate organizations throughout Panama and the rest of the world. During FY 1984 and early FY 1985, the most significant accomplishments and major program activities have been:

Systematics - STRI has undertaken the study of both pollen and seedling floras for Barro Colorado Island. The pollen flora provides an unique opportunity to reconstruct past history from pollen records in lakes and bogs, and to study bees and the pollen they collect. A comprehensive seedling flora will enable STRI researchers to assess directly recruitment to shrub and tree populations, a background that is essential to development of sound forestry practice in tropical forests.

Biological Diversity - Many STRI research programs are directed toward documentation of patterns in biological diversity and the processes that generate those patterns. In one such program, the behavioral diversity of squid was shown to involve ten times more displays than most birds and mammals. The diversity of reproductive systems is the focus of many researchers at STRI. The study of coral reef fishes at the San Blas Station shows a wealth of innovative solutions to ensure successful reproduction. One species of fish, for example, maintains functional organs of both sexes all of its life. They spawn in pairs with the members of a pair exchanging sex roles in successive spawning bouts.

Another project has shown that a bat is attracted to the call of the male katydid but, instead of eating the calling male, it eats the females which the male attracts. By not eating the male, the bat may ensure a supply of females attracted to the calling male. Other katydids have evolved various ways to attract mates without being eaten; they may call rarely, call from places inaccessible to bats, or attract mates by vibrating their perches in a manner that is sensed by members of its own species but not by bats.

In another study, the pollen diet of honeybees has been investigated as part of the study of the impact of invading feral "Africanized" honeybees on native bee communities in Panama. This invasion of Africanized honeybees has now reached the United States and this research may help to minimize the bees' potentially profound impact on American agriculture.

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Rhythms of Tropical Communities - In addition to recognition of the biological diversity of the tropics, it is important to understand how that diversity fits together in the life of the community as a whole. Seasonal rhythms of many forest organisms are tied to the cycles of the wet and dry season. Other cycles, although less obvious, are also important in marine communities (such as tidal and upwelling).

For numerous plants and animals, the seasonal cycles of reproduction and migration are affected by wet and dry seasons. Plant seeds, dispersed by the wind, ripen during the dry season when winds are the strongest. Iguana hatchlings emerge from their sandy nests at the beginning of the rains when new leaves are most abundant. Even plants on coral reefs have seasonal rhythms which reflect the seasonal distribution of exposures to low tide and wind. Elucidation of these rhythms is a central goal of STRI for the development of rational sustained yield exploitation of tropical resources.

Geographical Comparisons - The study of organisms and their adaptations must also be put in the context of comparable communities elsewhere. Do tropical communities in Malaysia exhibit the same seasonal rhythms and adaptations as those in Panama? Why is the diversity of tree species so much higher in Malaysia than in Panama? How do these differences affect animal communities and what are their consequences for managing forests for wood production or as nature preserves? Answers to these and many other questions are at the heart of STRI research goals, and communicating the results of this work is the primary function of the education and conservation programs.

Long-term Research and Biological Catastrophes - Solutions to the many biological problems of human societies in the tropics require long-term studies. STRI's permanent location and continuing research efforts in the tropics contribute toward the search for these solutions. Indeed, as a result of long-term research programs, STRI has come to recognize the significance of the catastrophes to which tropical communities are sometimes subjected. Recent examples include the devastation of coral populations following the overheating of surface waters of the eastern Pacific during the El Niño year of 1983. Mortality in many plants and marked changes in insect and bird populations were also attributed to the same El Niño. The devastation of a sea urchin population throughout much of the Caribbean due to an epidemic illustrates that marine organisms can experience diseases of plague proportions.

Role of Mankind in Tropical Habitats - Research programs at STRI seek to determine human influences in the tropics. Pottery fragments deep in forest soils show early presence of human populations at low densities but lack of fragments in surface layers suggest that some forest on Barro Colorado Island may be older than previously thought. Radiocarbon samples will precisely determine the age and duration of prehistoric occupations. Extension of this work will enable researchers to set the forest community of Barro Colorado Island in its proper historical context.

Studies of rainfall patterns in the last 100 years clearly show a significant decline in annual rainfall in central Panama. If the decline is attributable to human activities such as deforestation, it suggests an important message about conservation and the survival of mankind in tropical regions. Destruction of tropical forests may be slower than desertification in the Sahel but will, in the long-term, be no less devastating to human societies throughout the world.

A series of studies with the common theme of "Alternatives to Destruction" have been initiated to apply the knowledge of tropical plants and animals to the solution of real-life problems in the tropics. Ongoing studies of the green iguana, for example, will benefit the rural poor. The combined effects of removal of habitat (deforestation) and overharvest for its eggs and meat have decimated green iguana populations, robbing the people of Latin America of a traditional source of protein. Through the Iguana Management Project at STRI, scientists seek solutions to two major problems in Third World countries--protein deficiency and deforestation.

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Visiting Scientists - STRI acts as an intellectual magnet as it attracts scientists from throughout the world to its research facilities in central Panama. During 1985, STRI accommodated over 1,400 visitors, including over 400 scientists from 90 universities and 83 other institutions, 33 countries and 41 states. In addition, STRI scientific staff and fellows conducted research in over 18 countries throughout the tropics.

STRI provides a logistic and intellectual base for visiting investigators that is unrivaled. Its library, laboratories and residence facilities, along with the experience and knowledge of the professional staff, allow scientists from the northern temperate world to work in the tropics without sacrificing the kind of support to be found in universities. Dissertations on a wide variety of subjects can be pursued in a biologically rich environment without concern for intellectual isolation.

As a result of STRI's research and educational programs in the Republic of Panama, its relations with a variety of governmental and educational institutions in the host country have been strengthened. STRI is often invited to participate at nationally and internationally important roundtable discussions, seminars and workshops. Its advice is sought not only by interested scientists and scholars, but by members of the Panama National Assembly when relevant proposed legislation is being considered. Several collaborative scientific agreements with local educational, governmental and conservation organizations demonstrate these cooperative efforts. In FY 1986, in recognition of STRI's important role to the Nation, the Government of Panama, extended to STRI benefits and prerogatives that correspond to other international missions operating there.

Publications - At least 240 scientific papers and books were published in 1985 as a result of work at STRI. Staff and visiting scientists are currently involved in over 140 research projects which will produce at least the same number of publications. Two of STRI's fellowship recipients have received prestigious awards for their research accomplishments and publications in recent years. In 1984, Phyllis Coley, now of the University of Utah, won the Ecological Society of America's Mercer Award for her thesis research on Barro Colorado Island, published in Ecological Monographs. This award is given to that young ecologist with the best ecological research published in the United States or Canada during the past two years, and is the "highest form of recognition for published ecological research." In 1981, Nigel Franks of the University of Leeds, won Britain's Thomas Henry Huxley Award for thesis research on Barro Colorado Island.

Facilities - STRI research facilities in Panama include the Barro Colorado Nature Monument; a marine laboratory at Naos Island (on the Pacific Ocean); a smaller marine laboratory at Galeta Point (on the Atlantic Ocean); a small field station in the San Blas Islands; and a cloud forest station at an elevation of 6,500 feet in western Panama. Funding for the construction of a new laboratory and conference facility at STRI's central administrative complex in Panama City is requested as part of the Construction appropriation request for FY 1987. STRI also maintains a 63-foot vessel for studies in both oceans. In addition, these facilities are used as home base for research conducted at numerous other sites throughout Panama. STRI research programs include both comparative studies among habitats and geographic regions and numerous carefully organized experimental studies.

Fellowships, Conservation and Environmental Education - Because of its location in the Republic of Panama, STRI is in an unique position among Smithsonian bureaus to play a significant role in the study and conservation of tropical forests. The goals of STRI in the area of education are two-fold: on the one hand, STRI is interested in the development of creative and critical scientists from tropical and nontropical nations; on the other hand, STRI is committed to the conservation of tropical ecosystems and is aware that their survival depends on the combined efforts of international organizations and the governments and people in the tropical countries themselves.

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Approximately 100 young men and women representing a dozen nations (40 from Latin America) participated in STRI's academic programs in FY 1985. STRI and the Center for Marine Sciences and Limnology of the University of Panama organized a graduate-level course in tropical marine ecology attended by nine Panamanian students and five students from other Latin American nations. The participation of the foreign students was financed by a grant from the Tinker Foundation. STRI and Panama's Department of Education gave a one-week seminar on Conservation and Environmental Education attended by more than 30 local high school students.

STRI's educational function in tropical biology is enhanced by the best reference library for tropical studies in Latin America. This library serves STRI's staff, visiting scientists and students from secondary schools and universities in Panama. Currently, the library has over 1,000 patrons per month.

STRI is deeply involved in conservation activities in the Republic of Panama and, selectively, in other countries as well. Examples include sponsorship of student conservation groups; preparation of programs, articles, posters, exhibitions, and workshops; cooperative agreement with the Kuna Indians Employee Association to develop a biological reserve in the Comarca of San Blas; and technical assistance for the Parque Volcan Baru in Chiriqui. Studies of green iguana and forest gardening involve efforts to transfer the products of basic research programs to the "grass roots" local community.

The general objective of STRI's conservation/education program is to encourage a conservation ethic and to promote the preservation of forests and other threatened ecosystems in the tropics. During 1985, STRI's activities in conservation included synthesizing and disseminating information for the general public and Government of Panama agencies in an attempt to promote the implementation and enforcement of ecologically oriented national policies. For example, a colorful educational poster on the endangered species of Panama, and another on the subject of deforestation were distributed in schools and institutions throughout Panama. In addition, a series of articles on conservation education have been published in the local newspapers by STRI's Office of Educational Programs.

In the areas of public information, STRI published a brochure for visitors on the Barro Colorado Nature Monument and a Guide to the Trees of some of the finest forest in central Panama located in the Parque Nacional Soberania. A book written by STRI scientists, Ecology of the Tropical Forest, published by the Smithsonian Press in 1982, regarding research conducted on Barro Colorado Island, will be translated into Spanish for dissemination in the hispanic world. The STRI brochure "Opportunities for Research in the Tropics," presently distributed to hundreds of institutions throughout the United States and Europe, was translated into Spanish for distribution throughout Latin America.

All of these activities are designed to encourage research in the tropics, either by the direct support of individual projects or indirectly by encouraging the training of young scientists. This support is partly developed as a result of STRI's efforts as a constant advocate of the importance of studies in tropical biology to mankind as a whole.

EXPLANATION OF PROGRAM INCREASE - Research: Tropical Forest Biology Initiative ($345,000) - Rapid destruction of tropical biotas and the limited understanding of their dynamics makes the acquisition of new knowledge especially urgent. STRI's research in forest biology on Barro Colorado Island (BCI) is one of the largest and longest-term attacks on this problem. An increased investment in forest biology research programs at BCI can expand the horizons of tropical biology and provide solutions to many problems in tropical forestry.

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The staff of STRI have a history of individual research projects of exceptional quality. In addition, the Environmental Science Program has demonstrated the ability of STRI to integrate research activities of resident and visiting scientists into a substantive contribution to tropical biology. Another pioneering effort at STRI (census of a permanent 50-hectare plot of lowland forest) has the potential to form the central core of a major new initiative in tropical biology. The tree census project is clearly the most massive and definitive assault to date on the mystery of tropical tree species diversity. The scale of the work ensures that the results will stand for many years as the most authoritative data base on the demography and spatial relationship of tropical trees.

Optimal utilization of this data depends on funding of an expanded research effort to integrate that study into a larger programmatic initiative. Subject areas in which lack of knowledge is a critical impediment to advances in both basic and applied biology in the tropics include plant biology (physiology and seedling growth and development) and plant-animal interaction. For example, herbivorous (leaf-eating) insects can cause extensive defoliation, retarded growth and high mortality. Natural protection against these effects is conferred by toughened leaves, natural insecticides, or latex to inhibit insect attack. Identification of these attributes, the plant species that possess them, and the pests against which they are effective is fundamental to the development of a sound scientific foundation for reforestation of damaged watersheds, for conservation of tropical biotas as genetic reservoirs, and for sustained yield exploitation of tropical ecosystems.

Another active area of biological research involves use of molecular techniques to study evolution, a new field with the promise of elucidating some of the unsolved problems in the origin of organic diversity. Molecular techniques can be used in two distinct ways, both of which would be very relevant to STRI's mission and geographical location and mesh well with the 50-hectare census study.

1. Study of the evolution of molecules. An hypothesis which, if correct, allows the extraction of crucial evolutionary information for extant species is known as the "molecular clock." This hypothesis holds that molecules evolve at constant rates, so that molecular divergence can be used to calculate the time of splitting between two lineages. Panama is the ideal location both for testing the hypothesis and for calibrating the clock, because the rise of the Isthmus 3.1 to 3.7 million years ago provides a datable point, which allows the determination and comparison of divergence rates of many marine species in two oceans.

2. Application of molecular biology to the study of population biology and systematics. Molecules can be used to determine kinship relationship between individuals, migration between populations, changes in gene frequencies and relationships between taxa. Most of this information cannot be obtained in any other way, and all of it is of vital interest to the study and conservation of tropical populations. The tree census plot provides an excellent data base for kinship analysis and, thus, analysis of the genetic consequences of breeding systems for many tropical trees.

Despite recent advances in knowledge about the close relationship between plants and insects, present collections of terrestrial arthropods are woefully incomplete, especially in the tropics. Many tropical species undoubtedly have been and will be exterminated before they are even collected for the first time. Even in relatively well-studied areas such as central Panama, a large fraction of the fauna is still undescribed, including some very abundant species. A major effort would be initiated to study terrestrial forest insects on BCI with the goal of developing a synoptic collection in Panama. The strength of this proposal is that it couples systematic work with ecological studies of long duration. Such as collection would improve STRI facilities for research because it would be useful to many kinds of scientists.

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This initiative also incorporates major collaborative projects with ongoing studies in other tropical areas. First, the BCI census plot is now being duplicated at an exceptionally rich forest site in the dipterocarp forest of Malaysia. A Smithsonian contribution to this effort of the Malaysian Forest Research Institute is critical to ensure the collection of comparable data. In addition to providing an unmatched set of comparative data, it provides an excellent opportunity to foster international cooperative programs among tropical regions. Second, the insect studies will complement research and collection development by the Museum of Natural History in Peru.

Scientific advances sometimes come most rapidly with individual scientific initiatives. However, the case for a programmatic effort at BCI is strong and international collaboration adds measurably to the merit of this initiative.

Specifically, the requested increase would provide for supplies and laboratory equipment for research initiatives in plant physiology ($36,000), biochemical evolution ($106,000), and the demography studies ($38,000); STRI participation in Malaysian tree census ($50,000); insect field studies and collection development ($30,000); contractual services for tree demographic studies and arthropod field studies ($55,000); travel involved in above research programs including Malaysia, Washington, D.C., and South America ($30,000).

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These are derived from a variety of sources including receipts and collections from users of Barro Colorado Nature Monument facilities (20 U.S.C. 79b(d)) and annual allotments. They are used to support, in part, the salaries and related costs of the fellowship education program, the senior sabbatical program, insurance, supplies and facilities maintenance. Funds also are used to finance a short-term fellowship program in tropical biology, visiting scientists and students, field research, seminars and lectures, and to defray expenses at international scientific colloquia and ceremonial occasions. Funds also were provided from the Institution's Collections Acquisition, Scholarly Studies and Educational Outreach Program and Research Opportunities Fund for training in tropical biology, fellowships, field research, and environmental and research education in the tropics. Expenditures under this Program and the Research Opportunities Fund, totaling $190,000 in FY 1985, have not been recorded for FY 1986 and FY 1987 which explains the variance in totals shown between FY 1985 and the subsequent two years.

Restricted Funds - Funds provided here are in the form of restricted endowments which specify the use of the donation or bequest and of gifts and grants from individuals, foundations, organizations or corporations for specific purposes. These are used to support scientific research related to the biological, ecological and behavioral processes on which tropical ecosystems are organized; research related to geophysical events; publication and distribution of research results; and studies relating to endangered tropical environments. Among these is the Edward W. Nelson Endowment Fund which supports the research on the habitat selection and survivorship patterns in tropical forest birds (estimated expenditures of $11,000 in FY 1986).

Continuing support from the Exxon Corporation will be used to provide short-term tropical biology fellowships and assistance to 30 students from developing Latin American countries (estimated expenditures of $44,000 in FY 1986 and in FY 1987). A grant was recently received from the Jessie Smith Noyes Foundation to start a program of predoctoral fellowships for students from developing countries (estimated expenditures of $33,000 in FY 1986 and $17,000 in FY 1987).

The significant grant awarded by the W. Alton Jones Foundation, Inc. (recently increased by $100,000) will continue the following research projects: management of the

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green iguana to determine whether populations can be increased for human consumption; the possibility of domesticating the paca as a food source; the possibility of increasing the animal populations in the natural forests; and developing horticultural practices to be used inside tropical forests (the latter project funded by another foundation). These projects are developing alternatives to the destruction of tropical forests and are being carried out over a five-year period in the West Bank of the Panama Canal in the vicinity of the Barro Colorado Nature Monument (estimated expenditures of $230,000 in FY 1986 and $235,000 in FY 1987).

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SMITHSONIAN ENVIRONMENTAL RESEARCH CENTER

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
			General		Special Purpose					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1985 Actual	65	3,324	1	82	-	130	-	24	8	377
FY 1986 -Base	69	3,528	1	75	-	114	-	30	8	382
-PL 99-177***		3,383								
FY 1987 Estimate	69	3,614	1	84	-	112	-	5	8	383

* FTE = Full-time equivalent
** FTP = Full-time permanent positions
*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	69	-	69
11 Personnel Compensation	2,103	33	2,136
12 Personnel Benefits	266	5	271
21 Travel	26	1	27
22 Transportation of Things	1	-	1
23 Rent, Communications & Utilities	194	8	202
24 Printing & Reproduction	6	-	6
25 Other Services	333	14	347
26 Supplies & Materials	307	13	320
31 Equipment	292	12	304
Total	3,528	86	3,614

Analysis of Increase

Necessary Pay	38
Inflation	48

ABSTRACT - The Smithsonian Environmental Research Center (SERC) performs basic scientific research in two interrelated biological disciplines: (1) environmental biology--the study of plants and animals in natural environments and in simulated laboratory conditions to understand the growth, development and succession of whole environmental systems; and (2) regulatory biology--the study of mechanisms that regulate the growth and development of whole organisms down to their cellular and subcellular levels. SERC also maintains a radiocarbon dating laboratory that provides age estimates of archaeologically important samples for the Institution's museums and outside research institutions. SERC currently occupies a research laboratory building and greenhouse in Rockville, Maryland, and a 2,600-acre site near Edgewater, Maryland, consisting of a tidal river system and surrounding land. No program increase is requested for FY 1987. Necessary

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pay of $38,000 is required for existing staff and an amount of $48,000 is sought to compensate for the effects of inflation in nonsalary areas of expense.

PROGRAM - SERC research programs are concentrated in two major areas: environmental biology and regulatory biology.

An environmental biologist studies organisms at the organizational levels of populations, communities, ecosystems and landscapes. Much of the research is a long-term interdisciplinary study of a tidal river (the Rhode River) and its watershed. At Edgewater, scientists concentrate on (a) how land use, air quality, acid rain and weather variations affect the movement of matter through this environment; (b) the dynamics and structure of important local plants and animals; and (c) the productivity of these organisms. The research examines how changes in one part affect other parts of the Rhode River system and how the entire Rhode River estuary interacts with the adjacent Chesapeake Bay.

A regulatory biologist studies organisms at levels ranging from molecules to whole organisms. Research emphasis is on the mechanisms by which growth and development are affected by environmental factors, such as the duration, intensity, and color of sunlight, temperature, humidity, and carbon dioxide levels. Individual projects include the determination of the molecular structure of pigment molecules; the assembly processes for making and inserting molecules in photosynthetic membranes; the timing and chemical control of the formation of reproductive structures; the light activation and regulation of genes and enzymes; the control of photosynthetic productivity in controlled environments (especially those controlled for light, water content and carbon dioxide); measurements of the membrane properties of cells; and the characterization of stimulus-response systems related to light and gravity in fungi.

Research Results - Research at Edgewater seeks to alleviate a major environmental problem of the Chesapeake Bay--the excessive flow of nutrients and sediment from the land to the Bay. Management of natural vegetation on stream banks and shore lines seems a good partial solution.

The Center directly measured the rates of removal of eroded soil particulates and nutrients from cropland runoff by streamside forests and found that over 90 percent of the sediment, 85 percent of total phosphorus and 80 percent of the nitrate in surface runoffs was removed by the forest. Surface runoff and shallow groundwater discharge rates were measured for each storm for several years along with changes in their sediment and nutrient composition, as these waters transited the riparian forest. Even more dramatic, the forest also removed 90 percent of the nitrate in the groundwater. Essentially all of this removal took place in the first 20 yards of forest. The role of streamside forests is crucial in reducing the excessive flow of these important agricultural fertilizers into the Bay.

The Center shared the results of its research program by conducting a symposium in 1985 in which results from all known relevant research projects elsewhere were presented and discussed. The Smithsonian will publish the proceedings. The results from other research in coastal Georgia and North Carolina agreed with the Center's results and supported the validity of regional extrapolations. Thus, a cost effective solution to one of the most difficult pollution problems of the Chesapeake and surrounding water is now feasible.

Nutrient concentrations in interstitial water were measured throughout the year in two brackish Chesapeake Bay tidal marshes which differ in elevation and vegetation, and which receive runoff from the Rhode River watershed. At all sites, sulfate-to-chloride ratios were lowest during the fall. In contrast, dissolved ammonia, phosphate, organic nitrogen, and organic phosphorus concentrations did not vary seasonally but

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differed among sample sites. These nutrients were generally enriched in interstitial water relative to tidal water and those that were most enriched declined in concentration with increasing proximity to creeks. In the low marsh, comparison of nutrient concentrations in interstitial water with those in tidal water suggested that ebb water contained 5 to 15 percent interstitial water. Flow of interstitial water toward creek banks in the low marsh was traced with fluorescent tracer dye. Consequent seepage of interstitial water into the creek of the low marsh was estimated from continuous monitoring of water table heights and from measurements of hydraulic conductivity. The estimated seepage could account for only a small portion of the tidal export of dissolved nutrients from the low marsh. Recent studies in the Rhode River Estuary indicate that most of the observed exchanges of nutrients between tidal waters and tidal marshes probably occur by mixing processes on the surface of the marshes rather than along the creek banks.

SERC is monitoring ultraviolet sunlight at the Mauna Loa observatory in Hawaii. The ultraviolet data obtained show that there is a solar variability in measured ultraviolet light which is relatively small compared to the Sun's total output. Such variation in ultraviolet exposure may affect plant and animal life on the Earth.

Plant growth depends upon its ability to exchange carbon dioxide with the atmosphere. This exchange is regulated by the opening of small leaf pores, the size of which is believed to be regulated normally by photosynthesis of the cells that form these openings. Using a plant whose pore cells do not contain the chlorophyll necessary for photosynthesis, researchers found that adding blue light enhanced the nonphotosynthetic opening of these pores. The growth rate was found to be directly proportional to the degree of pore opening. Where normal leaf pore function is restricted, it has been shown that the regulation of pore sizes by nonphotosynthetic blue light may be very important in controlling the growth of crop plants.

The leaves of green plants contain pigmented structures, chloroplasts, where light is absorbed by chlorophyll for photosynthesis. These chloroplasts are composed of membrane and nonmembrane phases. The protein synthesis machinery of chloroplasts, chloroplast ribosomes, is distributed between both phases. The reason for this compartmentation is not known. However, it is thought that the chloroplast ribosomes associated with membranes add proteins to the membranes as part of the process of membrane growth. Evidence in support of this conclusion has been obtained. By studying the structure of the chlorophyll protein complex of the first light reaction of photosynthesis in membranes from spinach chloroplasts, two polypeptides were found. These polypeptides represent two gene products, and both appear to be made only by ribosomes bound to the chloroplast membranes. Such data are essential for understanding how chloroplasts grow.

One of the products of photosynthesis is oxygen. Two light-requiring systems are needed to produce oxygen, but the location and interrelationships of these systems within the photosynthetic membranes of two large groups of plants--the cyanobacteria and red algae--are unknown. These plants are unique because they contain red and blue colored pigments in antennae complexes that capture light energy very efficiently and transfer it to the photosynthetic reaction centers. Data have been obtained to support the hypothesis that the chloroplasts of the red algae originated from once free-living primitive cyanobacteria. By sensitive immunological techniques, it has been shown that the terminal pigments from such pigment complexes in both plant groups are cross-reactive. Such cross-reactivity indicates a common origin and provides data on the way in which photosynthesis developed on the primitive Earth.

Plants and animals are believed to have evolved from common ancestral organisms originating on the primitive Earth. The discovery of animal peptide hormone-like activity in plants provides new evidence in support of the common metabolism of such ancestors. In addition to the demonstration of insulin-like material in the flowering

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plant duckweed, Lemna, somatostatin-like activity also has been discovered in Lemna using radio-immunoassay. These materials also function like the animal hormones in animal bioassay systems. To date, their function in the growth of plants is not known, but their presence in plants is surprising and interesting.

The effects of environmental stimuli on an organism's sensitivity to gravity are being investigated using cells of the fungus Phycomyces. The application of gravitational stimuli to single cells of the fungus has led to the development of a reliable method that displaces large cell components such as the vacuole and cytoplasm and in doing so influences the cell's ability to sense the direction of gravity as well as its ability to grow. Results of this research are expected to be applied to studies of how other stimuli, such as light, may influence sensitivity to gravity.

Educational Activities - SERC provides a broad range of educational activities, including teacher-led field trips, self-guided nature trails, and guided tours in which groups of students and the general public observe firsthand a variety of natural habitats. A work-learn program enables students to work with scientists, both in the field and in the laboratory. Predoctoral, postdoctoral and sabbatical programs for professionals at all levels enable visiting researchers to carry out collaborative or independent research at SERC. The results of SERC's research are disseminated through the publication of findings in scientific journals, the presentation of research findings at national and international scientific meetings and seminars, the training of scientists, and public education activities.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These are provided by allotments and proceeds from the sale of educational brochures and materials. Uses include support of special events, work-learn and fellowship programs, and the salary costs of a docent coordinator and a part-time public program director.

Restricted Funds - These are provided through donations, bequests and foundation grants that are designated for specific subjects of investigation. For SERC, these include the Eppley Foundation Grant to support investigation of biological responses to solar radiation (estimated expenditures of $5,000 in FY 1986), and the Rollins Endowment Fund used to support the study of physical measurements of radiation (estimated expenditures of $6,000 in FY 1986 and $5,000 in FY 1987).

Federal Grants and Contracts - These funds are provided by various Federal and State agencies for special projects which can be conducted at SERC because of the expertise of the staff and the unique physical site characteristics. Contracts from the Chesapeake Research Consortium and the U.S. Department of Energy are expected to total approximately $382,000 in FY 1986 and $383,000 in FY 1987.

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NATIONAL AIR AND SPACE MUSEUM

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
			General		Special Purpose					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1985 Actual	227	8,112	-	8	29	3,126	-	252	2	101
FY 1986 -Base	211	8,515	-	8	29	3,087	-	131	3	294
-PL 99-177***		8,171								
FY 1987 Estimate	211	8,712	-	8	29	2,768	-	87	3	275

* FTE = Full-time equivalent
** FTP = Full-time permanent positions
*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	211	-	211
11 Personnel Compensation	5,941	105	6,046
12 Personnel Benefits	718	15	733
21 Travel	56	2	58
22 Transportation of Things	57	2	59
23 Rent, Communications & Utilities	28	1	29
24 Printing & Reproduction	139	6	145
25 Other Services	544	23	567
26 Supplies & Materials	405	17	422
31 Equipment	627	26	653
Total	8,515	197	8,712

Analysis of Increase

Necessary Pay	120
Inflation	77

ABSTRACT - The National Air and Space Museum (NASM) serves as an international center for the exhibition, research, education, and preservation and restoration of the artifacts and documentation related to the development of aviation, space flight and space science. Included in the collection are more than 300 historic aircraft and 250 spacecraft. The Museum serves a wide public and scholarly audience interested in the history and technological achievements of aviation and space flight. In addition to its Mall location, NASM maintains a facility for the preservation and restoration of artifacts at the Paul E. Garber Preservation, Restoration and Storage Facility in Suitland, Maryland. No program increase is requested for FY 1987. Necessary pay of $120,000 is required for existing staff and an amount of $77,000 is sought to compensate for the effects of inflation in nonsalary areas of expense.

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PROGRAM - During FY 1986, the National Air and Space Museum will celebrate two anniversaries: the 40th anniversary of the establishment of the Museum and the 10th anniversary of the opening of the Museum. Established by law on August 2, 1946, NASM's role as a national resource for public and scholarly interest in air and space fields was greatly strengthened by the completion of the current museum building on The Mall in 1976. More than 93 million people have visited the Museum since it opened, making it the most popular museum in the world. NASM's collections consist of more than 300 historic aircraft; 250 spacecraft; and extensive holdings of artifacts, papers, photographs, microfiche, video discs and technical drawings which are available for study by interested scholars throughout the United States and abroad. The exhibition program uses state-of-the-art techniques in exhibit design, presentation and equipment to convey excitement of the subject matter to the visitor. An active scientific research program in Earth and planetary geology continues as an important endeavor of the Museum. Active programs in collections management, preservation and restoration of artifacts remain as a centerpiece of the Museum's curatorial efforts. As a public institution, considerable emphasis is placed on the education and outreach activities through lectures, films, planetarium presentations, docent tours and written materials for schools and visitors to the Museum.

NASM maintains exhibits preparation, collections storage and management and preservation and restoration programs at the Paul E. Garber Facility in Suitland, Maryland. The Museum has restored more than 37 historic aircraft and spacecraft from its collections at the Garber Facility, and the restoration of at least two more per year are planned over the next several years. The Garber Facility also presents to the public approximately 90 aircraft, numerous spacecraft and other flight-related objects. In 1985, approximately 19,000 people visited the Garber Facility on scheduled tours throughout the year and during the annual open house.

Research - Research is the basic foundation of the Museum's efforts as a primary center for the study of the science and technology of aviation, space, and geophysical science. The results of research projects support the exhibitions, publications, education, historic restoration, and archival preservation programs. In FY 1985, a curator of Foreign Space Programs was added to the research staff, and the first Research Report was published. The Research Report in FY 1986 contains the results of the many research projects conducted by the Museum in the fields of Earth and planetary studies, space science and exploration, aeronautics and contemporary history. Furthermore, the Museum sponsors applied research and development programs in the restoration of historic aircraft and spacecraft, and in the storage and retrieval of archival and visual information.

Earth and Planetary Studies: The Center for Earth and Planetary Studies was established in 1973 to conduct research in comparative planetology and in the development of the Earth's landforms and surface composition by analyzing remote-sensing data obtained from satellites. Research analysis of remote-sensing data uses scientific information gathered by satellites and analyzed by computer to produce geological and topographical studies of areas of the surface of the Earth, the Moon, and other planets. In FY 1984, a new research project on satellite remote sensing of central Mali was initiated to determine the long-term effects of climate change on the fragile environment of the inland Niger Delta region. This ongoing project has already revealed dried-up lake beds and movement of layers of sand related to the drought and climate changes. Research in mapping and analyzing the origin of surface features on the Moon and Mars continued throughout FY 1985 and into FY 1986 with funding by the National Aeronautics and Space Administration (NASA).

In FY 1983, NASA designated the Center for Earth and Planetary Studies as a Planetary Image Facility, a repository allowing researchers access to the collections of images of the planets taken by NASA space probes. In FY 1985, the Center was utilized by

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more researchers than ever before. Plans are now under way to link the Planetary Image Facilities across the country beginning in FY 1986 so that this valuable information can be easily shared.

Space Science and Exploration: The Museum's research and documentation of the Space Telescope (an astronomical observatory scheduled to be launched into orbit by NASA in October 1986) will serve as a rich source of research material for historians in the future, and provide a valuable current record of space technology. The continuing oral history projects on the Space Telescope and Space Astronomy have already resulted in 450 hours of interviews with over 150 people. These transcripts are currently being used by numerous scholars in their research. A publication on the Space Telescope has been scheduled to coincide with its launch.

In FY 1986, a new research project on living and working in space will begin. This research will focus on the effects of long-term life in a space station and will culminate in a new exhibit based on the NASA Space Station. Other new research thrusts in FY 1986 will include the expansion of the oral history project to include the Planetary Sciences, never before studied by this methodology, and the documentation of the James Webb years at NASA.

Aeronautics: The Museum staff continued to work on the Smithsonian History of Aviation during FY 1985. Staff efforts will be directed toward a new series of scholarly monographs treating various aspects of aerospace history in FY 1986. The goal will be to attract to the Museum and the Smithsonian Press high quality manuscripts produced by scholars working with the Institution. The format of the series is being changed from multivolume to a single volume Smithsonian History of Aviation supplemented by the monographs.

Exhibitions - In FY 1985, new exhibitions at the Museum included "Military Air Transport," showing the establishment of air transport in the armed forces; "Focus on Flight: Four Decades of Aerial Photography," exhibiting portions of the extensive collections of Rudy Arnold and Hans Groenhoff contrasting the artistic and historic views of aerial photography; display of the restored aircraft DH-4 and N-1M, and accompanying exhibit panels outlining both their history and the restoration procedures; "Aerial Firefighting," showing the use of aircraft in detecting and controlling forest fires; "Edward Henry Heinemann and Clarence 'Kelly' Johnson: Designers for the Jet Age," displaying the historical significance of their world famous aircraft designs; "John Safer: Sculptor," exhibiting 14 pieces of his artwork including the "Web of Space" sculpture, the National Air and Space Museum Trophy; and "Leroy Grumman and the F6-F Hellcat," showing the aeronautical designs and historic establishment of the Grumman Corporation, and featuring a World War II Hellcat fighter. The ever popular art gallery in the Museum opened a new exhibition entitled "Fire and Ice, a History of Comets in Art." This exciting exhibition includes paintings, jewelry, furniture, books and buttons relating to comets and their influence throughout history.

The new planetarium show "Comet Quest" opened in the Albert Einstein Planetarium in FY 1985. This popular show commemorates the reappearance of Halley's Comet and explains its fascinating history. An accompanying exhibition shows the make-up of comets and the emphasis of Halley's Comet in history.

Exhibition plans for FY 1986 include the opening of the major gallery "Looking at Earth." This gallery will explore efforts to see the Earth from higher vantage points, starting with early attempts using birds and kites, continuing with balloons, aircraft, spacecraft and finally satellites to study the Earth's changing surface. A U-2 reconnaissance aircraft and numerous Landsat photographs will be on display, along with a weather satellite depicting the advanced technologies used to look at the Earth. In conjunction with this exhibition, the art gallery will feature the winners of the "Looking

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at Earth" art contest and photographs of the Earth. In January 1986, the Museum featured a continual slow scan video of the Voyager - Uranus encounter, the first close-up view of this faraway planet. The encounter and related exhibition will reveal a vast amount of information about this distant planet. Smaller exhibitions planned for FY 1986 include: "Exploring Comets"; "Space Food"; "America's Space Truck: The Space Shuttle"; "XV-22 Osprey Tilt rotor Helicopter"; "U. S. Military Aerial Demonstration Teams"; "Aerial Bombardment"; and the "Ariane IV Launch Vehicle."

The Museum will join with the United States Navy in FY 1986 in celebrating the 75th anniversary of U.S. Naval Aviation with several special exhibitions. Also planned for FY 1986 is the commemoration of the 50th anniversary of the Douglas DC-3, the one airplane which epitomizes the history of commercial air transport. The 50th anniversary of Air Traffic Control will also be commemorated by a special exhibition in FY 1986, in cooperation with the Federal Aviation Administration.

In FY 1987, NASM's plans for new exhibitions include "The Space Telescope" and "IRAS," the infrared astronomy satellite. Additional smaller exhibitions will cover "Women in Aviation"; "Gianni Caproni, Italian Aviation Pioneer"; and "Whitman Buster."

Exhibitions are complemented by film presentations related to air and space travel in the specially equipped Langley Theater, which uses an innovative high-resolution projection system (IMAX) and a giant screen for extraordinarily realistic effects. The newest IMAX film, "The Dream is Alive," premiered in June 1985, featuring actual film footage shot by the astronauts on three Shuttle missions. The combination of the high-resolution of the film and the size of the screen makes this film so realistic that it provides the audience with an accurate portrayal of space travel on the Shuttle. In FY 1986, another new IMAX film will debut called "On the Wing," presenting a comparison of natural and mechanical flight. Plans are currently being developed for additional film projects to begin in FY 1987 and beyond.

Development of Collections - In FY 1985, acquisitions included a UH1M helicopter gunship used in Vietnam; the American Eagle, the first ultralight used in police work; and a full-scale mock-up of the infrared astronomy satellite (IRAS). On December 6, 1985, the first NASA space shuttle, the Enterprise, was acquired by the National Air and Space Museum. Additional space artifacts are continually acquired from NASA missions.

Preservation and Restoration of the Collections - During FY 1985, the original 1903 Wright Brothers Flyer, because of its historic significance and public interest, was restored in the museum building on The Mall. The public was able to view and understand this delicate restoration project. The cleaning, chemical treatment and protection mark the first time that extensive preservation has been performed on the Flyer since Orville Wright prepared it for exhibition in 1927. Additional aircraft under restoration at the Garber Facility in FY 1985 included the OS2U Kingfisher, Spad XIII and the Arado 234. The restoration of the Wiseman-Cooke, a 1910 biplane which flew the first scheduled mail route, was completed in FY 1985. The treatment program, begun in FY 1983 to reduce further deterioration of aircraft not yet restored, has become the heart of the restoration program.

The Space Science and Exploration Department's Artifact Preservation Group has completed its third year of providing seminars and guidelines in the area of artifact preservation, exhibition, care and handling. These seminars have created an awareness of the special problems related to space artifacts that were designed and constructed based on one-time use in zero-gravity environments without oxygen, and not for extended storage or display on the Earth's surface.

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Video Disc Project and the Development of the System for Digital Display - With funding provided in FY 1985, the National Air and Space Museum has been able to accelerate its two archival programs utilizing video disc and computer technology: the Video Disc Project and the System for Digital Display. By continuing to develop and utilize these systems, the Museum can greatly expand its photographic and archival collections to enhance ongoing research efforts.

Video Disc Project: The enhancement of NASM's video disc program in FY 1985, with the addition of two camera operators and cameras, was made possible by additional funding provided in the FY 1985 budget. This preservation program of archival photographs and other visual collections consists of filming the images on 35mm film and the transfer of this film onto video disc format. With the expanded base for this program, over 350,000 images have been filmed to date and three discs have been completed. By facilitating greater access to the collection and eliminating the loss or destruction of the originals, this project has extended the availability of these vast collections to scholars throughout the world.

Development of the System for Digital Display: Utilizing the most advanced technological innovations in computer and video technologies, the Museum with additional funding provided in FY 1985 has successfully put together the first three production systems. Currently being tested in the field is the ability to translate any historical document into digital format, produce a printed copy of the text and conduct a full-text index search of any word. Two of the systems for digital display are presently at offsite locations to copy and store extremely valuable historical documents for use in research projects. The system has received international attention with requests for production installations coming from England and Austria, as well as numerous United States organizations. A patent for this digital display system is being sought. In FY 1986 and beyond, the system will continue to be refined, tested and employed all around the country, digitally storing and indexing invaluable collections.

Public Education and Orientation - The Office of University Programs was created to support the academic focus of the Museum. In FY 1985, the cooperative program between NASM and New York University continued, bringing History of Science undergraduate students to the Museum to conduct a portion of their course work and receive hands-on experience working with Museum artifacts. Expansion of this program to include a combination of international and regional universities will be developed and implemented in FY 1986 and FY 1987.

The Museum's elementary and secondary education outreach programs were expanded in FY 1985 by the production and distribution of new packaged programs. Additional outreach programs through teacher workbooks, brochures, curriculum materials and docent tours maintain NASM's high standard for education.

NASM continues to present many series of free lectures, seminars, symposia and films to the public. These include the General Electric sponsored lecture series, the Von Braun lecture, the Charles Lindbergh Memorial lecture, the Monthly Sky lecture and the Exploring Space with Astronomers lecture series.

During FY 1985, these events included lectures on "The Ultimate Is To Survive" by test pilot Chuck Yeager; "The Beginning of the Jet Age" by Hans von Ohain, inventor of the jet engine; and "'Houston, We've Got a Problem': Mission Control from Mercury to Shuttle" by Christopher Kraft from NASA Mission Control. Other presentations included "The Canals of Mars," "Comets: Relics of a Cold and Distant Past," "The Milky Way: An Insider's View," "Venus: Earth's Wayward Twin," "Flying Tigers to Turbojets," and "World Champion Air Racers: From Concept to Competition." NASM also sponsored "Ten Years After Apollo-Soyuz: A Symposium," and "Are We Alone? The Infrared Search for Planetary Systems."

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Publications - The planned publications for FY 1986 include the Wright Symposium papers, the artifact series publication on the History of Space Suits, the catalogue of the Space Astronomy Oral History Project, the Research Report and U.S. Women in Aviation 1930-39. Additional publications in FY 1986 include Congreve and Hale Rockets, and the Scholars Guide to Aerospace History in Washington, D.C. Publication projects planned for FY 1987 will include artifact series publications on Apollo 11 and the Titan Launch Vehicles, as well as the annual Research Report.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These are derived from a variety of sources including the Museum's share of the net proceeds from the shops and restaurant, the net proceeds resulting from bureau activities (such as the Theater and Planetarium) and small allowances. In addition to meeting expenses of the Theater and Planetarium, these funds are used to finance fellowships, guest lecturers, symposia and special events. Portions of the proceeds from the Theater and Planetarium are used to support the production of new IMAX films including "The Dream is Alive" and "On the Wing," and for support of other Institution programs. However, additional funding also was received for both new films. During FY 1985, in the Albert Einstein Planetarium, the Museum premiered a new show "Comet Quest," which commemorates the reappearance of Halley's Comet in 1986. Continuing support is provided for distinguished scholars to study at the Museum through the Lindbergh Chair of Aerospace History and the International Fellowship. Other fellowship programs include Guggenheim and Verville, which provide funding for pre- or post-doctoral students and other distinguished scholars in aviation and space science.

Restricted Funds - Funds provided here are in the form of restricted endowments which specify the use of the donation or bequest, and of gifts and foundation grants by individuals, organizations or corporations for specific purposes. Examples of these funds are the Ramsey Endowment, used to finance research relating to naval flight history (estimated expenditures of $25,000 in FY 1986 and $29,000 in FY 1987); the Guggenheim Endowment, which is used for lectures and stipends (estimated expenditures of $20,000 in FY 1986 and in FY 1987); the Martin Marietta Chair in Space History, which supports research by distinguished scholars in the space sciences (estimated expenditures of $38,000 in FY 1986); and the NASM Educational Fund, which is used for general education purposes, symposia and seminars (estimated expenditures of $32,000 in FY 1986 and $35,000 in FY 1987).

Federal Grants and Contracts - These are provided by various agencies and departments for special projects which can be conducted at NASM because of its expertise in a given area. Continued funding from the National Aeronautics and Space Administration grant program supports the following research activity in planetary geology by the Museum's Center for Earth and Planetary Studies: photogeologic investigation of planetary tectonic features (estimated expenditures of $89,000 in FY 1986 and $96,000 in FY 1987). Additional support from NASA enables efforts to continue in mapping and analyzing the origin of surface features on the Moon and Mars (estimated expenditures of $85,000 in FY 1986 and $84,000 in FY 1987). The research project on satellite remote sensing of central Mali, begun in FY 1984, continues to determine the long-term effects of climate change on the fragile environment of the inland Niger Delta region. This research was expanded in FY 1985 to cover fringe areas of the world's deserts and will receive continued financial support (estimated expenditures of $85,000 in FY 1986 and $65,000 in FY 1987). The Space Telescope Historical Project, a joint effort between NASM and the Johns Hopkins University, also is partially funded by NASA (estimated expenditures of $35,000 in FY 1986 and $30,000 in FY 1987).

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NATIONAL ZOOLOGICAL PARK

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
			General		Special Purpose					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1985 Actual	320	11,104	1	109	-	216	-	136	-	80
FY 1986 -Base	318	11,519	1	112	-	133	-	111	-	-
-PL 99-177***		11,043								
FY 1987 Estimate	318	11,747	1	113	-	125	-	60	-	-

* FTE = Full-time equivalent
** FTP = Full-time permanent positions
*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	318	-	318
11 Personnel Compensation	8,573	130	8,703
12 Personnel Benefits	1,079	19	1,098
21 Travel	39	2	41
22 Transportation of Things	11	-	11
23 Rent, Communications & Utilities	54	2	56
24 Printing & Reproduction	16	1	17
25 Other Services	434	18	452
26 Supplies & Materials	1,119	48	1,167
31 Equipment	189	8	197
42 Insurance Claims & Indemnities	5	-	5
Total	11,519	228	11,747

Analysis of Increase

Necessary Pay	149
Inflation	79

ABSTRACT - In its 1889 charter, the mission of the National Zoological Park was defined as "the advancement of science and the instruction and recreation of the people." Today these goals are accomplished through programs that make the National Zoological Park a leading international center for animal exhibition; biological and veterinary research; and public education in conservation and in the humane care of animals. The Zoo houses its public collection on a 163-acre site at Rock Creek Park in Washington, D.C., and maintains a major conservation, captive breeding and research center on 3,150 acres in Front Royal, Virginia. The Zoo serves the public and specialized audiences in understanding animal adaptations and evolution, and the interaction of wildlife with the environment, through its programs in research, conservation, animal health and education. No program increase is requested for FY 1987. Necessary pay of $149,000 is required for

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existing staff and an amount of $79,000 is sought to compensate for the effects of inflation in nonsalary areas of expense.

PROGRAM - At the Rock Creek site, the National Zoological Park is responsible for the maintenance and welfare of approximately 2,000 animals comprising 381 species. The species are chosen primarily for their interest to the public and their contribution to research and conservation. The more than 870 animals, representing 57 species, housed at the Conservation and Research Center (CRC) at Front Royal have been selected due to their long-term breeding potential and to the precarious nature of the species existence.

In addition to its traditional animal management practices, the Zoo plays a major role in developing new techniques for long-term sperm and embryo storage and embryo transplantation; these techniques probably will play a crucial part in future conservation objectives. Many species are endangered due to man-made disturbances to their natural habitats, which has been particularly true in the tropics. For this reason, the Zoo has an energetic program of conservation research in the natural habitats of endangered species and is conducting pioneering studies in the reintroduction of animals bred in captivity to their native habitat. The Zoo is developing programs to inform the public of the role both the public and zoos can play in animal conservation. The major programs of the National Zoo are: Animal Exhibition; Animal Management; Animal Conservation and Propagation; Research; and Public Education and Information.

Animal Exhibition - The primary objective in exhibiting animals is to interest the public in animal biology, and in the role animals play in the ecosystem. To best serve this purpose, animals must be provided with the physical conditions necessary for a complete and active life, and as natural an environment as possible. The success of the breeding program in the recently renovated Small Mammal House, which provides an esthetically pleasing and attractive setting, is strong testimony of the necessity of simulating the natural habitat while animals are held in captivity.

An August 1985 ground breaking ceremony marked the start of Phase I of the Olmsted Walk project. Renovation of this main walkway through the Zoo will enhance greatly the appearance of the Zoo, increase pedestrian comfort, and improve access to the exhibits. Completion of the first phase will unify all major buildings in the lower half of the park with a winding pedestrian walkway. This project is in keeping with the spirit of Frederick Law Olmsted, the pioneering landscape designer who contributed to the original design of the Zoo.

Further improvements to the Zoo are the new entrance and the gibbon exhibit. This innovative enclosure is designed to allow the gibbons to demonstrate their unique gymnastic ability. Olmsted Walk is slated for completion in time for the Zoo's centennial in 1989.

In July 1985, an Indian rhinoceros was placed on exhibit after an absence of five years, marking the first step in a major conservation effort to reestablish the species. This effort, in cooperation with other major zoos in the United States, is taking place under the auspices of the United States Species Survival Plan for Indian rhino. To assure genetic diversity and, thus, the success of the long-term program for the captive propagation of Indian rhinoceros in the United States, the National Plan will obtain animals from the wild with the aid of the Smithsonian Institution and the Government of Nepal.

Animal Management - Of prime importance is the health and well-being of the animals under the Zoo's care. The Zoo attempts to provide the animals with natural and congenial conditions which contribute to the overall state of health and a general absence of stress. In addition, the National Zoo provides the most advanced techniques in health

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care, preventive medicine, emergency treatment, surgery, dentistry, and neonatal medicine. The medical care is reinforced by a scientifically-based nutrition program and the highest standard of food preparation. Comprehensive medical and general records, the majority of which are automated, are maintained on all animals. These records are a major tool in maintaining the Zoo's health standards and in developing breeding programs.

In an average year, approximately 2,500 medical cases require attention, of which about 500 require hospitalization. In FY 1985, a new 12,000 square foot hospital opened at the Conservation and Research Center, Front Royal. Similar facilities at Rock Creek are, however, less than satisfactory. The hospital at Rock Creek was built in 1969 and is now inadequate. With funds appropriated in FY 1986, construction will begin on a 17,000 square foot hospital building at Rock Creek. This facility will consist of a large operating room with adjoining support rooms. Both new hospital facilities will add tremendously to the level of animal care at the Zoo.

Animal Conservation and Propagation - The Conservation and Research Center plays an important role in research and breeding programs for rare and endangered species. Significant births and hatchings during 1985 included: red-footed tortoise, green tree python, Guam rail (a highly endangered bird), and the tiger quoll (the first of this species born outside its Australian homeland). In addition, the Center's facilities provide a unique environment for the establishment of selected breeding programs. This has enabled the Center to breed successfully such animals as zebras, Burmese brow-antlered deer, scimitar-horned oryx, Pere David's deer, maned wolves, lesser pandas, binturong, and selected birds, especially cranes.

The Center also is an important training ground for the Wildlife Management and Conservation curriculum which is taught to many nationals of developing nations. Nearly 100 students from South America, Africa and Asia have participated in this unique course at Front Royal, and over 100 students have attended the course in Sri Lanka, Venezuela, Peru, Indonesia, and Brazil. Training is also given to United States students of veterinary medicine, pathology, animal behavior and animal management. The Zoo also will continue to play an active leadership role in a variety of national cooperative breeding programs including those for the golden lion tamarin, gorilla, orangutan, tiger, and small-clawed otter.

The National Zoo is active in international programs of biological conservation. An integral part of these programs is the reintroduction to their native habitat of various animals bred in captivity. One such study during 1984 and 1985, involved zoo-bred golden lion tamarins which were reintroduced to a protected forest in Brazil. This reintroduction was the ultimate step in a comprehensive and pioneering program to save this animal from extinction. To ensure the success of the reintroduction of tamarins, the Zoo instituted a thorough program of research and management. Captive-born animals had to be "educated" to fend for themselves in the wild, and become acclimated to the different foods and climate of their native habitat. This process involved training the animals to search for hidden and dispersed food and to recognize a wide range of naturally occurring edible objects. At present, reintroduced animals have raised infants and are thriving in the wild.

Conservation efforts have also entailed placing animals with other zoos. Over the years, pygmy hippopotami have been shipped to zoos in Argentina, Indonesia and Singapore. The Zoo continues to explore opportunities to place this rare species in zoos outside the United States in order to further captive reproduction and zoological interest in this species.

Research - The success of the programs in conservation and propagation depends largely upon the Zoo's ongoing research. The reintroduction of the golden lion tamarins

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to the wild would not have been possible without sophisticated and painstaking research. With little prior knowledge, Zoo researchers had to study in great detail the structure of the social and family life of tamarins before they could successfully breed them and, ultimately, re-create natural groups of animals capable of surviving in the forests of Brazil.

Basic research at the Zoo concentrates on understanding the factors which influence the daily lives of animals. These factors range from communication patterns to nutrition. The results of these studies are published in reports and delivered at various scientific congresses. In FY 1985, the Zoo staff published over 124 scientific articles.

Another major focus of research at NZP is genetics studies, which is conducted in conjunction with zoos around the world and with the National Cancer Institute. These studies are expected to contribute to the long-term viability of captive populations of critically endangered species. Automated demographic models and long-term breeding plans are being developed for captive tigers, Asiatic lions, and golden lion tamarins. Efforts to determine the pedigrees of several hundred captive endangered Bali mynahs were initiated prior to establishing a reintroduction program for this bird in Bali, Indonesia. New biochemical studies resulted in the finding that cheetahs in captivity show little genetic variation, a possible partial explanation for their poor captive breeding record.

Two new research projects were started on a species completely new to the Zoo's collection. In collaboration with the Duke University Primate Center, the Zoo successfully reproduced, for the first time, western tarsiers acquired from Malaysia. Tarsiers have been little maintained or exhibited in zoos due to their delicate and nocturnal nature. Plans to conduct field studies on the behavioral ecology of this primate have been made to develop a more comprehensive understanding of the biology of these animals. The Zoo also has spearheaded an attempt to breed Guam rails in captivity. This bird is disappearing from the island with astonishing rapidity and the Zoo hopes that the decline of the species can be reversed and captive-bred rails be reintroduced to Guam.

Public Education and Information - As part of its broad educational programs, the Zoo reaches out to a large audience with signs posted throughout the park. More personal educational efforts are provided through programs such as "Meet a Snake," and "laboratory" groups like HERPlab, BIRDlab, and ZOOlab. More than 10,000 people have visited HERPlab, a program that received a national educators award in 1983. Public education and orientation are assiduously pursued by the Zoo, the success of which is seen in the approbation the Zoo has received from as far away as Japan and Australia. The Zoo series "Symposia for the Public," which began in 1982 to introduce serious, biological theory to nonspecialists has met with complete success. The Zoo is engaged in finding innovative ways to inform visitors of its multifarious conservation programs. A weekend event, the Tropical Forest Festival, consisting of a series of multi media activities, addressed tropical forests, their animal inhabitants and the problems facing tropical forests today. A temporary exhibition, "ZOOARK and Beyond" is in the planning stage (scheduled to open in the summer of 1986). This exhibition will inform visitors of world wildlife conservation problems and on what both zoos and the public can do to help solve these problems.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These funds are derived from a variety of sources including fees for general use of the facilities at the Conservation and Research Center at Front Royal. Expenditures are made for the support and maintenance of these facilities; for the purchase of animals for the collection; and for salary and support costs for the director. In addition, FY 1985 funding from the

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Institution's Collections Acquisition, Scholarly Studies and Educational Outreach Program, Research Opportunities Fund and Special Exhibition Fund amounted to $74,000 in support of research, education and exhibition projects.

Restricted Funds - These are provided through gifts and foundation grants and are used to support specific research projects and education programs. For example, funds provided from a grant from the Packard Foundation are being used to train foreign nationals from developing nations in animal management techniques.

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OFFICE OF THE ASSISTANT SECRETARY FOR HISTORY AND ART

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
			General		Special Purpose					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1985 Actual	9	401	-	3	-	3	-	-	-	2
FY 1986 -Base	8	364	-	4	-	1	-	1	-	-
-PL 99-177***		424								
FY 1987 Estimate	8	370	-	4	-	1	-	1	-	-

* FTE = Full-time equivalent
** FTP = Full-time permanent positions
*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	8	0	8
11 Personnel Compensation	303	4	307
12 Personnel Benefits	38	2	40
21 Travel	7	-	7
22 Rent, Communications & Utilities	6	-	6
25 Other Services	6	-	6
26 Supplies & Materials	3	-	3
31 Equipment	1	-	1
Total	364	6	370

Analysis of Increase

Necessary Pay	6

ABSTRACT - The Assistant Secretary for History and Art supervises the Smithsonian Institution's history and art programs and activities. No program increase is requested for FY 1987. Necessary pay of $6,000 is required for existing staff.

PROGRAM - I. The Office of Assistant Secretary for History and Art: With a base of 3 workyears and $184,000 this Office advises and assists the Secretary in overseeing the programs of the Smithsonian history and art bureaus, which include: the Archives of American Art (headquartered in Washington, D.C. with regional offices in Boston, Detroit, New York, San Francisco and Los Angeles); the Cooper-Hewitt Museum in New York City; the Center for Asian Art, consisting of both the Freer Gallery of Art and the Arthur M. Sackler Gallery; the Hirshhorn Museum and Sculpture Garden; the National Museum of African Art; the National Museum of American Art and its Renwick Gallery; the National Museum of American History; the National Portrait Gallery; the American Studies Program; and the Anacostia Neighborhood Museum. During FY 1986 and FY 1987, the opening of the

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Arthur M. Sackler Gallery and the transfer of the National Museum of African Art to its new quarters in the Quadrangle will be of highest priority. The Office coordinates and manages Institution-wide special projects, programs, exhibitions and publications commemorating significant historical individuals and events. In FY 1987, this will include the continuation of the editorial project to publish the manuscripts of Joseph Henry (1797-1878), the eminent American physicist and first Secretary of the Smithsonian Institution, and the planning of exhibitions and activities to commemorate the bicentennial of the signing of the Constitution. The Office administers the Regents' Collections Acquisition Program, which was established to facilitate the purchase of major acquisitions by Smithsonian museums. The Office also bears responsibility for the oversight of planning for the use of the General Post Office building.

II. Joseph Henry Papers: With a base of 5 workyears and $180,000, the Joseph Henry Papers collects, transcribes, edits, researches, and publishes the manuscripts of Joseph Henry. This entails extensive searches in this country and abroad for extant Henry documents. Publication objectives include a projected fifteen-volume letterpress edition, an indexed microfilm edition of approximately 90,000 items, and special publications aimed at more general audiences. The Papers of Joseph Henry is an essential resource work for historians in the history of science, and in the intellectual and cultural history of the United States. The letterpress edition is a source of otherwise unpublished and often previously unknown letters and papers that shed light on the history of the sciences in 19th-century America, on the development of Federal policy towards the sciences, and on the institutionalization and social structure of the scientific community in this country. The extensive annotation and introductory essays included in the work also provide an invaluable interpretive study of Henry and his milieu.

In FY 1985, the Henry Papers project published its fifth letterpress volume, which covered the years 1841 to 1843, during which time Henry was Professor of Natural Philosophy at the College of New Jersey (Princeton), and was still actively engaged in experimentation in electricity and magnetism. The Henry Papers project has begun the sixth volume, which includes the years 1844-1846. This volume covers the end of Henry's tenure at Princeton, the establishment of the Smithsonian Institution, and Henry's selection as the first Secretary of the Smithsonian in December 1846. This volume will be submitted for publication in FY 1987. Work will then commence on the seventh volume, documenting Henry's first years at the Smithsonian.

In FY 1986, the Henry Papers project will automate many of its activities, install personal computer work stations, printers, and a local area network. This will facilitate the production of the letterpress volumes, as well as aid in research and the entry of information into the documentary index.

In pursuit of its mission, the Henry Papers cooperates with other Smithsonian units on various projects. Two recent projects have been a symposium in connection with the exhibition on the Wilkes Expedition at the Museum of Natural History, and an exhibition to celebrate the tricentennial of Newton's Principia at the Museum of American History.

In FY 1987, the staff will continue to conduct research in American history and the history of science, to participate in many different scholarly activities, and to help with the Newton exhibition.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These funds provide for memberships for the Institution in the American Council of Learned Societies and the American Crafts Council and for expenses associated with the Office of the Assistant Secretary.

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NATIONAL MUSEUM OF AMERICAN HISTORY

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
			General		Special Purpose					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1985 Actual	301	11,130	4	354	1	793	-	267	1	41
FY 1986 -Base	301	11,912	3	207	1	356	-	719	1	9
-PL 99-177***		11,342								
FY 1987 Estimate	301	12,357	2	176	1	349	-	515	-	-

* FTE = Full-time equivalent
** FTP = Full-time permanent positions
*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	301	-	301
11 Personnel Compensation	8,384	137	8,521
12 Personnel Benefits	1,058	20	1,078
21 Travel	76	6	82
22 Transportation of Things	75	6	81
23 Rent, Communications & Utilities	26	1	27
24 Printing & Reproduction	82	47	129
25 Other Services	1,390	156	1,546
26 Supplies & Materials	559	64	623
31 Equipment	182	8	190
Collections Acquisition	80	-	80
Total	11,912	445	12,357

Analysis of Increase

Necessary Pay	157
Inflation	103
Program Funds	185

ABSTRACT - The National Museum of American History (NMAH) collects and preserves the Nation's material culture, the artifacts that embody the national heritage of the United States. By carefully enlarging and preserving its collections and using them as a basis for exhibitions, educational programs, research, and publications, the Museum offers scholars and the public the opportunity to understand the history of the United States. In addition to the Mall building, the Museum maintains the exhibition "1876 Centennial," located in the Arts and Industries Building, and supervises the movement and care of objects stored in six buildings in Suitland, Maryland. For FY 1987, an increase of $185,000 is requested to complete the production and installation of the exhibition

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and related programs commemorating the bicentennial of the signing of the United States Constitution. Necessary pay of $157,000 is required for existing staff and an amount of $103,000 is sought to compensate for the effects of inflation in nonsalary areas of expense.

PROGRAM - The National Museum of American History possesses the largest and most diverse collection representing the heritage of the United States. Covering a wide spectrum of materials, sizes, and descriptions, these museum objects include railroad trains, automobiles, textiles, photographs, paintings, sculpture, paper materials, clothing and costumes, tools, power machinery, clocks, weapons, ceramics and glass, musical instruments, scientific instruments of all kinds, one million numismatic specimens, and 14 million stamps.

As custodian of these artifacts of American history, the Museum has the obligation to protect and preserve them for future generations. To that end, the Museum continues to work toward achieving a more comprehensive collections management program by integrating and improving its conservation, registrarial, object storage, archival, and other key collections management functions. Through the collections, as well as exhibitions and a wide range of programs including publications, lectures, symposia, concerts, public tours and demonstrations, and film and broadcast features, the Museum presents this Nation's history to more than five million visitors per year.

Exhibitions - The Museum's first major reinstallation of a permanent exhibition opened in November 1985. "After the Revolution: Everyday Life in America, 1780-1800" uses period settings to examine the daily routines and concerns of a Delaware farm family, a Massachusetts merchant, and a Virginia planter; community studies tell visitors about the African-Americans of the Chesapeake, the Seneca Nation of the Iroquois Confederacy in New York, and the urban world of Philadelphia. Based on years of research, "After the Revolution" is a major new interpretation of the diversity of the American people at our Nation's beginning.

In November 1986, the Museum will open its second major reinstallation of a permanent exhibition: "Engines of Change: The Industrial Revolution in America, 1790-1860." This exhibition will show how the Industrial Revolution in America brought new tools for transforming energy, new ways of organizing work, and a new entrepreneurial spirit to the United States.

Several new exhibitions opened in FY 1985, including "Eleanor Roosevelt: First Person Singular," which presented more than 100 photographs, objects, and documents, and explored the major influences and interests that shaped her life; "Bridges of Niagara," a traveling exhibition depicting the history behind the nearly 20 bridges built at Niagara Falls between 1848 and the present; "Celestial Images," another traveling exhibition, which displays and describes the history and use of astronomical charts that date from A.D. 1500 to 1900; "Discover Graphics," an exhibit of 40 color and black-and-white prints produced by Washington metropolitan area high school students who were participants in a unique seminar and studio training program on printmaking; "European Roots of American Pharmacy," an exhibition of selected objects from the Squibb European Pharmacy Collection, the largest and most valuable collection in North America of pharmaceutical artifacts from the 15th to the 19th centuries; and "History as Seen from the National Museum of American History," an exhibition that presented photographs by Smithsonian photographers of some of the most important celebrations and demonstrations on and around the Mall in 1984 and 1985. Through its "Case of the Month" exhibit program, the Museum was able to present 18 mini-shows, including "Running Fun: A Treasury of American Political Humor," "Stamp Collecting: King of Hobbies...Hobby of Kings," "The Americanization of the California Missions," "A Constellation of Black Sports Stars," "Thomas A. Edison: Documents and Artifacts," "Women in the Navy," "Ben Franklin and the Colonial Posts," and "Building the Bomb: Forty Years After Hiroshima."

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Several new temporary exhibitions also opened in early FY 1986. In conjunction with the celebration of the Festival of India, "Aditi: The Monies of India" presents a broad survey of Indian history as reflected in this Museum's Indian numismatic collection, and "All Sorts of Painted Stuffs: Indian Chintzes and Their Western Counterparts" examines the use of Indian fabrics in the West and describes the impact of their popularity on the British and French textile industries. "Beyond the City Lights: American Domestic Gas Lighting Systems" explores the development of gas lighting and how it contributed to the first widespread illumination of America. "At Home on the Road" examines the enduring American urge to take to the highway by outlining the history of 19th-century leisure travel, presenting 20th-century innovations such as tourist travel by automobile, auto-camping and recreational vehicles, and looking at the ways Americans have managed to bring pieces of home with them on the road. Other exhibitions scheduled to open in FY 1986 include "Hollywood: Legend and Reality," a Smithsonian Institution Traveling Exhibition Service (SITES) exhibition, which will celebrate the creative achievement and cultural influence of American movies over the past 70 years; "Domestic Interiors" which will depict the major changes that occurred in the way Americans furnished their houses during the 1700s; "Graphic Arts: 100 Years," which will show the evolution of the Museum's graphic arts division and how it has interpreted what "Graphic Arts" meant, what a collection was, and how an exhibit was presented. "Patent Office," which will commemorate the 150th anniversary of the U.S. Patent Office; and "Reaching Rural America," which will highlight the growth and importance of rural free mail delivery in America.

With funding provided in FY 1985, a large part of the research and planning phases of the exhibition, "The Japanese-American Experience in World War II," was completed. Developed to celebrate the 200th anniversary of the signing of the Constitution in 1987, the exhibition will deal with the complex problems facing national and state decision makers during World War II, when they had to balance constitutional guarantees of civil rights against requirements for military security. The exhibition will particularly focus on issues of civil rights for Japanese Americans and on their patriotic contributions during World War II.

During FY 1984 and FY 1985, the Museum also shared some of its most valuable and treasured objects with an international audience. Benjamin Franklin's walking stick, models of Eli Whitney's cotton gin and the McCormick reaper, a silver tray owned by George Washington, even a 19th-century buckboard, among other objects, traveled to Scotland with the "Treasures of the Smithsonian" exhibition for the 1984 Edinburgh International Festival. The Smithsonian Chamber Players, a part of the Museum's Department of Public Programs, also performed at the Festival. In the same spirit, the Museum loaned the world's oldest operable locomotive, the John Bull; a patent model of an early Singer sewing machine; a compass carried by William Clark on the Lewis and Clark expedition; and several other invaluable objects, some never before exhibited outside the Museum, to the Dallas Arts District for its opening in the spring of 1985.

Master Space Planning Program for NMAH - In FY 1985, in collaboration with the Smithsonian's Office of Design and Construction, the Museum began its master space planning program, designed to document space requirements of the Museum both short- and long-term (the next 20 years). The plan breaks down into two main categories: program and support. The program needs under study include spaces for offices, exhibitions, storage, and other working spaces from which a variety of plans can be drawn. Support plans will be drawn up for utilities, heating, ventilitating and air conditioning (HVAC) systems, security, fire protection, and other environmental improvements. Documenting program needs over the long-term should enable the Museum to define future space needs, put forward design options, and identify needed structures as far in advance as possible; the master plan will also permit the Museum to integrate support improvements into the plans for future programs so that these improvements do not interfere with exhibitions and public programs. The master plan also will include estimates of future long-term program and support funding needs.

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Collections Management - In FY 1985, the Museum concentrated its efforts on maintaining the shelf survey of the collections (completed in 1983) while it set priorities and began to refine the data collected. To that end, the Office of the Registrar established an Office of Central Catalogue that supports the Museum's inventory maintenance, refinement, and collections research efforts. The Museum hired a director for its Office of Computer Services in FY 1985 and also upgraded and expanded its minicomputer system to provide more data, word, and network processing for its growing collections and new collections management needs. The Museum's Division of Conservation examined, rehoused, or treated more than 3,000 objects in FY 1985. Surveys were completed for more than 250 paintings in the Museum, work made possible by the additional positions received in FY 1985. Funding provided in FY 1985 for object storage equipment permitted the rehousing of severely overcrowded collections in four of the Museum's divisions. Major archival collections were organized and finding aids prepared during FY 1985. The Museum's Archives Center published an 89-page register to the George H. Clark Collection of Radio History materials (1880-1950), and organized, rehoused, and described in writing the finding aids of some 200 boxes of business ephemera in the Warshaw Collection of Business Americana. The Donald Sultner-Welles collection of approximately 100,000 color transparencies is also being prepared for use by researchers. New positions provided in the FY 1985 budget have been instrumental in completing these projects.

In FY 1986, the Museum is making measured progress toward completing the refinement of its shelf survey data. A more complete description of the Museum's inventory accomplishments and goals is included in the Collections Management/Inventory Program section of this budget. In order to accommodate the various upcoming moves of collections, the Museum has begun to implement its new registration tracking system, and the Division of Conservation is accelerating its rehousing and stabilization treatment program for deteriorating objects identified in previous surveys.

The Museum's Archives Center is developing policies and procedures for archival storage, reproduction, and use of video tapes and audio tapes in the collections. The Center is also continuing to receive and care for additional manuscript collections from curatorial divisions.

Suitland Facilities and the Museum Support Center - In addition to its reference collections at the Mall building, the Museum stores more than one million objects in six buildings at the Institution's Suitland Facility. These buildings are contaminated by asbestos, as are the objects stored there. With funding provided by Congress in FY 1985 and FY 1986, a team of technicians was formed to begin a thorough cleaning program of both the objects and the buildings. A great deal of preliminary work has been accomplished including establishing a processing area and a clean work area; cleaning and reorganizing outside space for better storage; cleaning all the objects in one building; and acquiring a newly renovated building for storing oversized objects. In FY 1986, comprehensive cleaning of three more buildings and their objects is under way. The team is also preparing objects and their records for transfer to the new Museum Support Center.

In FY 1985, preliminary planning began for the movement of objects to the Museum Support Center. The Museum has already prepared some objects for transfer; purchased supplies and equipment; selected staging and storage areas; and identified recordkeeping and resource requirements. In FY 1986, the Museum will begin to survey the objects on the Mall as well as at the Suitland Facility; the staff will begin refining records, and moving, photographing, cleaning, packing, and storing these objects.

Research - As the result of research conducted by NMAH curatorial staff, the following works were published in FY 1985: The Great Rifle Controversy; Small Arms Today; Bibliography of C.F. Gauss; American Anthem: An Exhibit of Songs and Symbols

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of American History; That's What She Said: Contemporary Fiction and Poetry by Native American Women; Organ Planning; Ragtime: Its History, Composers, and Music; Material Culture: The Shape of Things Around Us; and After the Revolution: The Smithsonian History of Everyday Life in the Eighteenth Century.

A dozen articles were also published including: "Museum Exhibits, Breaking the Silence," "Love at First Byte: Wordplay and Imagination in the New Machine Age," "The Atomic Clock from Concept to Commercial Product," and "At the Edge of Science: Joseph Henry, Visionary Theorizer and the Smithsonian Institution."

The Museum has sponsored or co-sponsored numerous symposia and seminars on such subjects as puppetry in the Federal Theatre Project and the Work Projects Administration, music in America, technology in the Industrial Revolution, Indian Museums, and the historical experience of the American Indian.

The Museum continues to provide support staff and space for the scholarly publication Technology and Culture, the official journal of the Society for the History of Technology, and provides assistance to American Visions, a magazine examining Afro-American culture, the first issue of which appeared in January 1986. The Museum's Afro-American Communities Project continues to develop a data base of social and economic information dealing with the structure and development of free black communities in ten U.S. cities prior to the Civil War.

Research Center - In FY 1986, the Museum will seek to establish a research center for the study of American history. This program will combine, in a more structured way, the existing research centers of the Museum--the Eisenhower Institute, the Afro-American Research Project, the Archives Center, and the journal Technology and Culture--with the relationships already established on an ad hoc basis with several universities. The center will promote new affiliations and provide encouragement and opportunity for intramural research, and its programs will be geared to the strengths of the Museum: the social history of science and technology; the intersections among political, social, and cultural history; and material culture. The new center will offer a regular program of seminars, and might include different seminars for undergraduates and graduates. The center will afford outside faculty the opportunity to teach, do research, and write in a new setting; offer university administrators the chance to attract more students; and enable the Museum to cultivate and enrich its research capacity.

Collections Acquisition - During FY 1985, the Museum received, through purchase or gift, a number of significant collections. Some of the acquisitions include: a late 19th-century cotton gin with gearing and gin house; a circa 1852 papier-mâché of a human body; two clockwork automata made in southern Germany in the 17th century; a colonial postal rate chart dated 1765, signed by Postmaster General Benjamin Franklin (believed to be the only such chart in existence); a wood and pewter schoolmaster's rod from the 18th century; a "Philadelphia" printing press, circa 1850, an iron hand-press made by Frederick Bronstrup; Woolworth Building structural drawings, 162 ink-on-linen tracings of the structural steel work for the first monumental skyscraper, the Woolworth Building in New York City, 1909-13; the NASCAR stock car that Richard Petty drove to his unprecedented 200th Grand National victory in 1984; and Benjamin Franklin's General Post Office Account, dated 1770 to 1772, written entirely in Franklin's own hand.

Public Programs - The Museum's Department of Public Programs provides visitors with a range of opportunities and incentives for learning. In the past few years, the Museum has experienced a significant increase in visitorship, and with the opening of the permanent exhibition, "After the Revolution: Everyday Life in America, 1780-1800," the Department expects heightened demands on all of its offices.

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The education function of the Department is central to its overall mission, and its accomplishments can be measured in several ways. The Museum's Calendar of Events, produced by this Department and now in its second year of publication, reaches over 12,000 individuals and institutions on a quarterly basis providing accurate and timely information on Museum activities. Staff members from the Department of Public Programs introduce roughly 90,000 visitors to exhibitions and demonstrations in the Museum through school programs, tours, and Discovery Corners. More than 100,000 people attended Museum performance and film programs during the past year, and through radio broadcasts on National Public Radio and American Public Radio, an estimated five to six million listeners outside the Washington metropolitan area became familiar with this Museum and its activities.

The Department sponsored the Smithsonian Chamber Music Series, 28 concerts in all. Colloquia/concert programs such as "Jazz Improvisation," "Women in Blues," and "Black Classical Composers," contributed highly original scholarship to the exploration of black American Culture while strengthening the Smithsonian's outreach activities and minority awareness of the Museum. Other programs in collaboration with curatorial departments, universities, and educational organizations gave added depth to many exhibitions and enabled the Museum to offer educational presentations throughout its public spaces.

In FY 1986, the Department has continued to develop its broad array of programs. A new "Hands on History Room" in the "After the Revolution" exhibition offers visitors insight into the lives of 18th-century Americans by touching and working with accurate reproductions of 18th-century tools and objects and through other participatory experiences. The Department also will inaugurate the "Highlights of the Collections" popular booklet series. These illustrated booklets will describe specific objects and collections and give the public the opportunity to learn about some of the many important objects not on display in the Museum.

EXPLANATION OF PROGRAM INCREASE - Constitution Bicentennial ($185,000) - In 1987, the Nation will celebrate the 200th anniversary of the signing of the United States Constitution. The Museum will commemorate this occasion with a special exhibition scheduled to open in September 1987 presenting the process of Constitutional growth and change as exemplified by the experience of the Japanese American community.

Occupying more than 4,000 square feet, the exhibition will focus on Japanese immigration to the United States; early restrictions on citizenship based on racial prejudice; the relocation program of World War II; the combat record of the Japanese Americans; and the resolution of the basic Constitutional issues after 1945. This study of the experience of one immigrant group provides an ideal means of portraying the Constitution as a dynamic document capable of growth and interpretation to accommodate or accelerate social change.

In addition, work on this exhibition has given the Museum an opportunity to strengthen its collection of objects related to ethnic history. These acquisitions reaffirm our commitment as an institution with an interest in portraying the contributions of all Americans to our rich heritage.

With funding provided by Congress in FY 1985, a large part of the research and planning phases of the show was completed. An exhibition currently on display in California will provide some of the material and objects for the show, with the remaining items to be loaned by individuals. An audio-visual system using the latest video disc technology is being designed as well. In FY 1986, with additional funding provided by Congress, the Museum will be able to complete artifact, graphic, and film research phases, cover the cost of the initial contracts for the exhibition's design, and continue the work associated with the show's audio-visual presentation. In addition, the space needed for the exhibition will be created by dismantling and reorganizing exhibitions in

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the Museum's third floor Ordnance Hall. Ordnance collections are being temporarily displaced and will be reinstalled on a mezzanine.

For FY 1987, the Museum requires an increase of $185,000 over the FY 1986 base of $265,000, to finish the exhibition and related work. From the outset, the Museum had planned on its major reinstallation program to support much of the demolition and construction work. This assumption was based on having by now a substantially larger reinstallation budget which could accommodate production of more than one major installation at a time through existing production capabilities. Unfortunately, budget restrictions have kept the reinstallation program funded at a level which both precludes having all the necessary production capability and which dictates a slow pace; thus the need for the additional support. With this total of $450,000 the Museum will be able to complete the project on time.

During this final year of preparation for the exhibition, hundreds of objects will be borrowed from museums and organizations in Hawaii and California. Many of these objects will require extensive conservation work before they can be exhibited. The exhibition's design will be finalized and the demolition and construction work completed. An extensive audio-visual system will also be purchased and installed.

Finally, a small portion of these funds will be expended for the completion of a mezzanine unit to house the National Fire Arms Collection. This collection had been displaced in order to create space for the exhibition. The mezzanine provides 2,000 square feet of collections storage space in addition to accommodating the Fire Arms Collection.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - This income is derived from a variety of sources including the Museum's share of sales in the Museum Shop/Bookstore, cafeteria concession, product development activities, and publication royalties. In FY 1986, these funds are being used to support the salary costs for the positions of museum director and a graphic designer, care of the furniture collection and the cost of cataloguing and otherwise making accessible for research the Sultner Photographic Collection. Purchases for the collection, supported by allotments in FY 1985, included the Bradford Cup, which was made in London in 1634 and belonged to William Bradford, a passenger on the Mayflower and later governor of the Plymouth Colony.

Assistance was provided in FY 1985 to the American Visions Foundation, Inc., for American Visions, a magazine about Afro-American culture. Funds also were provided in FY 1985 and will be provided for FY 1986 for the Museum's Chamber Music Players to support a special performance and recordings program.

Special purpose funds include those from the Institution's Collections Acquisition, Scholarly Studies and Educational Outreach Program, the Research Opportunities Fund and the Special Exhibition Fund which helped support NMAH programs in the areas of affirmative action, scholarly publications, research and exhibitions. Of special note were research and planning support for the exhibition "Field to Factory: Afro-American Migration 1915 - 1940" which will portray the movement of hundreds of thousands of Afro-Americans from the southern states to northern urban centers during and after World War I; support for establishing an American Indian program initiative; and a cooperative education program. Expenditures under this Program, the Research Opportunities Fund, and the Special Exhibition Fund, totaling $166,000 in FY 1985, have not been recorded for FY 1986 and FY 1987 which explains the variance in totals shown for these years.

Restricted Funds - Individual or corporate gifts and foundation grants are the principal sources of income under these funds. In FY 1985, a number of exhibitions and

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special projects received support. One hundred thousand dollars in the form of a general gift was received from Trammell Crow and Associates. These funds are largely being used to support the education programs associated with the Museum's first major reinstallation of a permanent exhibition, "After the Revolution: Everyday Life in America, 1780-1800." IBM Corporation provided two grants ($20,000 and $25,000) for the research work needed for planning an information exhibition. The Goldsmith Foundation provided $43,000 for a project entitled "Study, Recording, Publication, and Exhibition of Smithsonian Ethnographic Judaica."

The Pepsi Cola Company gave a second gift of $8,000 in support of a special oral history project they had initiated with funding in FY 1984. In FY 1986, the Museum will receive the first installment of a grant of $592,000 from DuPont, which will be the principal support for another of the Museum's major permanent exhibition reinstallations. The exhibition, entitled "Materials," deals with the vast range of natural and synthetic materials as well as the social and economic consequences of their distribution and manufacture within the United States.

Federal Grants and Contracts - The Museum received a grant from the National Historical Publications and Records Commission of $47,000 to fund the Robert Mills Project, a research and publications endeavor focused on assembling and publishing the complete papers and drawings of Robert Mills, the nation's first native-born and trained professional architect.

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NATIONAL MUSEUM OF AMERICAN ART

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS: FEDERAL FUNDS FTE*	FEDERAL FUNDS Amount	UNRESTRICTED FUNDS: General FTP**	General Amount	Special Purpose FTP**	Special Purpose Amount	RESTRICTED FUNDS FTP**	RESTRICTED FUNDS Amount	FEDERAL GRANTS & CONTRACTS FTP**	FEDERAL GRANTS & CONTRACTS Amount
FY 1985 Actual	115	4,625	-	63	4	331	-	315	-	2
FY 1986 -Base	118	4,793	-	45	4	171	-	760	-	-
-PL 99-177***		4,600								
FY 1987 Estimate	118	4,959	-	47	4	177	-	394	-	-

* FTE = Full-time equivalent
** FTP = Full-time permanent positions
*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	118	-	118
11 Personnel Compensation	3,229	48	3,277
12 Personnel Benefits	332	7	339
21 Travel	54	2	56
22 Transportation of Things	61	2	63
23 Rent, Communications & Utilities	36	2	38
24 Printing & Reproduction	125	5	130
25 Other Services	323	58	381
26 Supplies & Materials	267	12	279
31 Equipment	97	19	116
Collections Acquisition	269	11	280
Total	4,793	166	4,959

Analysis of Increase

Necessary Pay	55
Inflation	51
Program Funds	60

ABSTRACT - The National Museum of American Art (NMAA) is devoted to the acquisition, preservation, study, and exhibition of American painting, sculpture, graphic arts, and crafts. The Renwick Gallery, which operates under the purview of the National Museum of American Art, exhibits American crafts, as well as decorative arts and design. The Barney Studio House, with a part-time curator paid from an endowment, is also maintained by the Museum as a period home open for tours and for special interpretive programs. For FY 1987, an increase of $60,000 is requested to continue development of the Inventory of American Sculpture. Necessary pay of $55,000 is required for existing staff and an amount of $51,000 is sought to compensate for the effects of inflation in nonsalary areas of expense.

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PROGRAM - The National Museum of American Art's collection represents American art from its beginnings to the present and serves as the basis for active programs of research, exhibition, and public education. The permanent collection includes over 32,000 objects and continues to grow at a rate of approximately 1,000 new acquisitions each year. A portion of the permanent collection is on view to the public on a rotating basis in the Museum's galleries. The balance is available for study in storage or on loan to selected museums and university galleries throughout the country. Preservation and restoration of irreplaceable American art works also are important features of the Museum's mission. Scholarly research performed by the professional staff results in publications, exhibitions, and educational programs which further the understanding of American art and artists.

The Museum's reference materials are used by both lay and scholarly researchers from a wide variety of disciplines. Unique among the Museum's research resources are the Inventory of American Paintings Executed Before 1914; the Smithsonian Art Index, which lists art works housed in the Institution's museum museums; and the Index of Pre-1877 American Art Exhibition Catalogues, which documents artistic activities in this country and Canada. These inventories comprise more than 500,000 computer entries, and constitute the most complete data base on the subject of American art in existence.

Collections - In FY 1985, the Museum was given two large and important collections of 20th-century art. The Container Corporation of America donated 311 paintings, sculptures, and graphic artworks from the 1933-1980 period, including major objects by many established masters. Selections from this celebrated collection were shown in a special exhibition in late 1985 and will travel to at least two other locations. The second major collection, donated by the Sara Roby Foundation, includes 169 paintings, sculptures, and drawings by artists who worked from the 1920s through the early 1980s. This collection is especially strong in figurative art and will substantially enrich the Museum's holdings in this area. The collection will be unveiled in a public exhibition in January 1987. In addition to these major gifts, the Museum received a gift of woven objects by Anni Albers.

During FY 1985, the Museum purchased significant individual works. Among these are Achelous and Hercules, a 24-foot mural by Thomas Hart Benton, and important paintings by William Morris Hunt, Edward Bannister, Charles Sprague Pearce, Peter Blume, Lorser Feitelson, and Albert Gallatin. The Museum's newest area of collecting--American photography since World War II--grew through the addition of key photographs by Aaron Siskind, Carl Chiarenza, Gary Winogrand, Arthur Ollman, Ray Metzker, and others. Significant woven objects by Cynthia Schira, and Clare Zeisler were purchased for the Museum's crafts collections.

As in the past, the Museum benefited in FY 1985 from the transfer of contemporary works on paper and sculpture maquettes from the National Endowment for the Arts and the General Services Administration, respectively.

In FY 1986 and FY 1987, the Museum will continue to seek major works by artists inadequately represented in the collection, and will maintain its tradition of acquiring high-quality works by artists who have had a significant effect on the development of American art. In January 1986, the Museum accessioned William Rush's Model by Thomas C. Eakins, an acquisition made possible by a gift from Mr. and Mrs. R. Crosby Kemper, Jr.

The preservation, management, and security of the collections remain central concerns of the Museum. More than 400 objects were treated by the conservation staff during FY 1985. The Museum staff also attended professional workshops on security and began a long-range program to increase its protection of objects in storage and on exhibition.

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Publications - The National Museum of American Art's new acquisitions and on going exhibition programs continue to generate significant research which lead to publication. In FY 1985, the following major catalogues were published: Sharing Traditions: Five Black Artists in Nineteenth Century America; The Martha Jackson Memorial Collection; Creation and Renewal: Views of Cotopaxi by Frederic Edwin Church; The Woven and Graphic Art of Anni Albers; and Werner Drewes: Sixty-Five Years of Printmaking. In FY 1986 the Museum will publish two major contributions to American Art: A documentation of 81 of the Museum's greatest objects and The Art of New Mexico, 1900-1945. Research has also been carried out on objects in the permanent collection, particularly on recent acquisitions. Preliminary research has begun for future exhibitions of the art of Albert Pinkham Ryder and Gene Davis. Additional research and publication projects now in progress include a revised edition of the catalogue raisonne of works by Mary Cassatt, a catalogue raisonne of the art of Joseph Cornell, a book on the sculpture of Paul Manship, and a study of the experience of 19th-century American artists who studied in French academies.

Research - Research resources at the Museum continue to provide unparalleled opportunities for scholars of American art. In preparation of a national Inventory of American Sculpture, which will be comparable to the Museum's Inventory of American Paintings, a one-year pilot project is under way to automate the University of Delaware's Index of American Sculpture. The Delaware Index is currently the only substantial repository of information on public sculpture and works in museum and private collections. By automating the Index's manual records, the Museum will develop critical formats and standards for handling research information on sculpture. With future funding, efforts will continue to seek and record sculpture in public and private collections throughout the United States. The Museum has received enthusiastic letters of endorsement and offers of assistance from museums, conservators, historical societies, and individuals throughout the country who are interested in contributing to the program.

Throughout FY 1985, the National Museum of American Art continued to augment its other research resources, adding roughly 7,200 slides and over 8,000 prints to its Slide and Photograph Archives. An additional 6,000 nitrate negatives from the Museum's collection (taken by Peter A. Juley, the noted photographer of works by American artists), were converted to stable film. The Inventory of American Paintings, the only existing national census of paintings, added 10,000 records and is now serving over 1,500 requests a year, ranging from interdisciplinary queries to art publication and exhibition research.

Exhibitions - Exhibition programming during FY 1985 featured works from the Museum's collections as well as exhibitions featuring the work of specific artists and thematic topics pertaining to the history of American art. The following exhibitions were circulated to other museums across the United States: "Sharing Traditions: Five Black Artists in Nineteenth-Century America"; "Wood Works: Constructions by Robert Indiana"; and "The Woven and Graphic Art of Anni Albers." The Museum's earlier exhibition, "Exposed and Developed: Photography Sponsored by the National Endowment for the Arts," continued to tour.

"Treasures of the National Museum of American Art," an exhibition of some of the finest works in the Museum's permanent collection, will travel nationally to five major cities during FY 1986 and FY 1987. The tour will afford exposure to the Museum's collection in areas of the country where it has been relatively unknown. All costs of the exhibition's organization and travel will be underwritten by United Technologies Corporation.

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Future exhibitions will include "The Art of New Mexico: Themes and Perspectives," "Gene Davis Memorial Tribute," "American Prints from Washington Collections," "Post Office Murals and Studies," "The Art of John LaFarge," and "American Art Deco," as well as the previously mentioned exhibitions featuring the Sara Roby Foundation Collection.

Also in FY 1985, the National Museum of American Art lent more than 300 artworks from its permanent collection to other museums and organizations in the United States and abroad for temporary exhibition and display. Within the Museum the permanent collection continues to be the focus of small changing exhibitions, such as "Zoo to Art: Animal Subjects by American Sculptors."

Interpretive Programs - The Museum presents scholarly programs coincident with current exhibitions, such as the symposium "Creation and Renewal: Views of Cotopaxi by Frederic Edwin Church," as well as diverse educational activities such as lectures, performances, films, and related programs which complement exhibitions and enrich the learning experience of the Museum's visitors. In addition to a broad spectrum of educational programs for the scholarly community and the general public, the National Museum of American Art has assumed a national as well as local role in the fostering of art education. In January and February 1985, the Museum presented a "Festival of Afro-American Arts" to supplement the exhibition "Sharing Traditions: Five Black Artists in Nineteenth-Century America." As the exhibition travels nationally, under the auspices of the Smithsonian Institution Traveling Exhibition Service, many of the programs presented at the Museum are being repeated in the cities in which the exhibition is being shown. The exhibition is accompanied by a packet of interpretive materials specifically designed for use by teachers and their students.

In FY 1986, the National Museum of American Art will continue its interpretive programs which highlight the permanent collection and temporary exhibitions. For example, a series of "conversations with artists" featuring living American artists whose work is represented in the permanent collection will be presented at the Barney Studio House.

EXPLANATION OF PROGRAM INCREASE - Research ($60,000) - For FY 1987, an increase of $60,000 is requested to continue development of the Inventory of American Sculpture. In response to a nationwide appeal three years ago from educators, cultural historians, conservators, collectors, curators, and scholars, the National Museum of American Art began work on a comprehensive registry of American sculpture, which supplements its renowned and widely used Inventory of American Paintings Executed before 1914. As a test vehicle the Museum is currently developing standards for, and placing on computer format, the 14,000-record card file on American sculpture at the University of Delaware. Once this is completed, the Museum will begin an intensive national survey to locate and document all American sculpture in public and private collections, and in interior and outside locations. No systematic or substantial inventory has ever been taken of the bronze and marble statues in the parks and town squares across the Nation.

The National Museum of American Art has been asked to conduct the nationwide survey due to its commitment to research in the study of American art and the worldwide recognition it enjoys for having pioneered the only existing census of American paintings. The sculpture inventory will be similar to the paintings inventory in its indexing by computer owner/location, subject matter, artist, title, medium, dimensions, and other pertinent data for each work. Using the original methodology developed for the Inventory of American Paintings, the sculpture inventory will be implemented by: 1) soliciting information by means of questionnaires mailed to museums, collectors and governmental agencies utilizing the mailing lists, sources, and contacts developed for the Inventory of American Paintings; 2) extracting information from published sources on sculpture (collection, exhibition, and auction catalogues); and 3) conducting field surveys throughout the country to locate and document works of sculpture. Volunteer assistance will be organized and used whenever possible.

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The Inventory of American Sculpture would benefit a large constituency, including state and local art councils, curators, educators, art scholars, conservators, authors, publishers, historians, collectors, civic groups, and the public in general. In addition, a study of the state of the Nation's sculptures, which are being threatened by the effects of acid rain and air pollution, is the necessary first step toward conservation of America's public monuments.

As well as establishing the first resource of its kind for sculpture, the project will serve as a unique form of educational outreach bringing citizens together on the community level to seek and identify local statues and memorials honoring great men and women, forgotten heroes, and battles. As information is gathered across the country, it will be entered in the research data base on the Smithsonian Institution's Bibliographic Information System where it will eventually be accessible to scholars and the general public, either at the Smithsonian or from anywhere in the country via a home computer or other remote terminal.

After completion of the national survey, the National Museum of American Art will maintain this project from its base resources. The Museum has already received letters of support from institutions and individuals throughout the country expressing their desire to participate in the first study of the location and plight of America's monuments; the light these works shed on the history of the United States; the Nation's preferences in taste and subject matter; and of the evolution of sculpture in America as an art form.

An increase of $60,000 would allow the project to proceed steadily. Of this amount, $45,000 will be used to contract three data technicians to convert information from the ongoing nationwide survey to the Smithsonian's research data base. The remaining $15,000 will cover the cost of initial computer equipment for data entry (two terminals) and Smithsonian Institution Bibliographic Information Systems cost center charges to maintain the data base on-line. In future years, $10,000 for equipment will be reprogrammed for additional contract work.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These funds are derived from a variety of sources including the Museum's share of sales in the restaurant and museum shop; allotments for special purposes; royalties from publications; sales of slides and photographs; honoraria received by staff while on official duty; participation fees from museums to which National Museum of American Art exhibitions are lent; and tuition reimbursement from universities for NMAA interns. Funds are used to support publications, traveling exhibitions, and public programs; curatorial research and travel; stipends for summer interns; purchase of photographic supplies; travel costs for meetings of the National Museum of American Art Commission; repairs to the Barney Studio House; and special events for the opening of new exhibitions. Starting in FY 1984, through an agreement with the J. Paul Getty Center for the History of Art and the Humanities, Special Purpose funds have been used to continue the preservation project of the Juley Collection until its anticipated completion in FY 1989 (estimated expenditures of $62,000 in FY 1986, and $67,000 in FY 1987). In FY 1985, funds from the Institution's Collections Acquisition, Scholarly Studies and Educational Outreach Program were used to purchase a 24-foot mural, Achelous and Hercules by Thomas Hart Benton, and funds from the Special Exhibitions Fund were used to support "Art Design and the Modern Corporation," an exhibition of 150 art works selected from the recently donated collection of the Container Corporation of America. Expenditures under these programs, totaling $466,000 for FY 1985, have not been recorded for FY 1986 and FY 1987 which explains the variance in totals shown for these years.

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Restricted Funds - These funds are contributed for specific purposes in the form of gifts and grants from individuals, foundations, or corporations. Funds are available to support curatorial and programmatic activities of the Barney Studio House (expenditures of approximately $35,000 annually). With support from the Robert Tyler Davis Bequest, prints and drawings continue to be purchased for the permanent collection (estimated expenditures of $10,000 in FY 1986 and in FY 1987). Other significant uses of restricted grants and gifts are for the support of publications, such as The Graphic Art of Mary Cassatt and Sculpture and the Federal Triangle, and for the support of programs, video tapes, and other activities of specific exhibitions, including "Sharing Traditions: Five Black Artists in Nineteenth-Century America"; "Reuben Nakian: Apprentice to the Gods"; and "Life: The Second Decade 1946-1955." In FY 1985, refurbishment began on the Doris H. Magowan Portrait Miniature Gallery and should be completed during FY 1986 (estimated expenditures of $57,000 in FY 1986). In FY 1985, funds were obtained to begin work on an Inventory of American Sculpture pilot project ($62,000), the "Treasures of the National Museum of American Art" exhibition (estimated expenditures of $97,000 in FY 1986 and $57,000 in FY 1987), and the "Art of New Mexico" exhibition (estimated expenditures of $136,000 in FY 1986). In addition, the Museum was fortunate to acquire recently a painting of William Rush's Model by Thomas C. Eakins (estimated expenditure of $250,000 in FY 1986 and FY 1987).

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NATIONAL PORTRAIT GALLERY

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
			General		Special Purpose					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1985 Actual	82	3,407	-	13	4	122	2	192	-	-
FY 1986 -Base	83	3,391	-	18	-	104	2	158	-	-
-PL 99-177***		3,446								
FY 1987 Estimate	83	3,770	-	18	-	88	-	126	-	-

* FTE = Full-time equivalent
** FTP = Full-time permanent positions
*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	83	-	83
11 Personnel Compensation	2,165	44	2,209
12 Personnel Benefits	275	7	282
21 Travel	23	1	24
22 Transportation of Things	107	5	112
23 Rent, Communications & Utilities	21	1	22
24 Printing & Reproduction	101	4	105
25 Other Services	226	105	331
26 Supplies & Materials	216	8	224
31 Equipment	94	4	98
Collections Acquisition	363	-	363
Total	3,391	179	3,770

Analysis of Increase

Necessary Pay	51
Inflation	48
Program Funds	80

ABSTRACT - The National Portrait Gallery (NPG) provides a focus for the exhibition and study of portraits depicting men and women who have made significant contributions to American history, development and culture, and of the artists who created such portraiture. For FY 1987, an increase of $80,000 is requested to fund initial planning and research for an exhibition celebrating the Bicentennial of the United States Constitution. Necessary pay of $51,000 is required for existing staff and an amount of $48,000 is sought to compensate for the effects of inflation in nonsalary areas of expense.

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PROGRAM - The arts of portraiture and biography are the means by which the Gallery offers a continuing exploration of the heritage and accomplishments of the American people. The Gallery collects, studies, preserves, and exhibits portraits in all media as both historical and artistic documents.

The growth of NPG's collections entails a great responsibility for research into, and careful conservation of the objects acquired. Research results are published by curators and historians in articles, monographs and exhibition catalogues. The collections, which are exhibited continuously in a series of galleries, are cared for by professional conservators on the Gallery's staff. The Gallery also organizes a schedule of popular and scholarly temporary exhibitions on a wide variety of subjects. Each exhibition is accompanied by an illustrated catalogue and usually incorporates materials borrowed from museums throughout the country and abroad.

Collections - In FY 1985, the Gallery purchased more than 100 works and received approximately 75 gifts. Notable among the painted portraits were Gilbert Stuart's portrait of the Revolutionary War and War of 1812 officer William Hull, composer Virgil Thompson by the late Alice Neel, writer Dashiell Hammett and singer Lena Horne by Edward Biberman, and artist Frank Duveneck's self-portrait. Major prints and other paper works included images of artists Thomas Hart Benton and John Steuart Curry; a multiple in cast paper of composer Philip Glass by Chuck Close; a Covarrubias caricature of collector Chester Dale; Ben Shahn's drawing of atomic physicist J. Robert Oppenheimer; as well as a rare broadside advertising a $100,000 reward for John Wilkes Booth and his accomplices. Among the outstanding photographs acquired were the portraits of photographer Edward Steichen by Heinrich Kuhn; two portraits of Edward Everett by the Scottish photographers Hill and Adamson; a tintype of James Butler ("Wild Bill") Hickok; authors Tennessee Williams and S. J. Perelman by Irving Penn, composer Aaron Copland by George Platt Lynes; entertainer Gypsy Rose Lee by Ralph Steiner; and photographer Diane Arbus by Gary Winogrand. In FY 1986, fund raising has been initiated to enable the Gallery to purchase the portrait of editor Talcott Williams by Thomas Eakins.

Exhibitions - During FY 1985, the National Portrait Gallery's exhibition program was distinguished by diversity and scholarship and reflected the Gallery's study of significant Americans and the artists who portrayed them.

The exhibition, "Baseball Immortals, 1905-1935: The Photographs of Charles Martin Conlon," was opened in October 1984 by diamond greats Leo Durocher, Bill Terry and Lefty Gomez. The photographs in the exhibition were selected from nearly 7,000 glass plate negatives in the collection of The Sporting News, the Nation's oldest sports publication. The exhibition is being circulated by the Smithsonian Institution Traveling Exhibition Service.

In November 1984, the witty and amusing caricatures of Mexican artist Miguel Covarrubias were presented. The talented Covarrubias came to live in New York City in the early 1920s and his visual comments on the American cultural scene were published in The New Yorker and Vanity Fair. Original drawings and paintings for both previously published and unknown caricatures were exhibited. Part of this exhibition was sent to the San Angelo Museum of Art in Texas for its inaugural show in February 1985.

Concurrent with the Covarrubias exhibition was the "Metropolitan Opera Centennial: A Photographic Album," a selection of 100 images chronicling great moments in the history of that institution.

In January 1985, the exhibition "Peace and Friendship: Indian Peace Medals in the United States," was opened, which illustrated the significant role that medals played in relations between Native Americans and United States Presidents. This is the first time that examples of all the peace medals issued by the United States Government have been

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brought together. The exhibition will be shown at the Buffalo Bill Historical Museum in Cody, Wyoming, the Joslyn Museum of Art in Omaha, Nebraska, and the Denver Museum of Natural History.

In February 1985, two enlightening exhibitions opened. "Joseph Wright, American Artist, 1756-1793," examined the work of a man who, in his brief career, achieved many firsts. Wright was the first American-born artist to study at London's Royal Academy, the first to sculpt George Washington, and the first engraver to the United States Mint. "Thomas Paine: A Hero Scorned," included sculpture, prints, books, cartoons and paintings relating to Paine's career as a political and social reformer, and to the vicissitudes his reputation underwent in America and abroad.

In April 1985, two exhibitions of mid-19th-century American portrait artists were presented: "A Truthful Likeness: Chester Harding and His Portraits" and "William Edward West, 1788-1857, Kentucky Painter." The examination of these neglected artists underscored the richness and diversity of their portrait work. The West exhibition was on view at the Lauren Rogers Museum, Laurel, Mississippi, during the summer of 1985, and in the autumn both the Harding and West exhibitions moved to the J. B. Speed Museum in Louisville, Kentucky.

In July 1985, an exhibition on Ulysses S. Grant commemorated the centennial of his death. The exhibition, which focused on Grant's role as soldier and president, was jointly organized by the Gallery and the Lyndon Baines Johnson Presidential Library in Austin, Texas, to which it moved at the close of its Washington, D. C. showing. An exhibition of prints featuring family portraits of famous 19th-century individuals opened in August 1985, as did "Women on TIME" which was installed in the room devoted to TIME cover originals.

Exhibitions scheduled for FY 1986 include photographs by Mathew Brady from the collection of Harvard University and the portrait sculpture of Gaston Lachaise and John Frazee. Research has begun on exhibitions to be held in FY 1987 and FY 1988, including "On the Air: Pioneers of American Broadcasting," "The Portraits of Henry Inman," "The Portrait in America from 1700 to 1776," and masterpieces from the national collections of Sweden.

Publications - Most of the publications of FY 1985 were generated by research for the exhibitions. Brochures for "Baseball Immortals, 1905-1935: The Photographs of Charles Martin Conlon," were produced, and catalogues to accompany the exhibitions on Miguel Covarrubias, Indian Peace Medals, Joseph Wright, William Edward West, Chester Harding, and Ulysses S. Grant were prepared. FY 1986 exhibition catalogues will include those for Gaston Lachaise and John Frazee. The Indian Peace Medals, William Edward West, and Miguel Covarrubias catalogues have received awards in recognition of the high quality of their design in this year's American Association of Museums' Museum Publications Competition, as has the National Portrait Gallery's quarterly Calendar of Events. The Smithsonian Institution Press is handling trade distribution of the Miguel Covarrubias and Chester Harding catalogues, while the Southern Illinois University Press is undertaking the distribution of the Ulysses S. Grant exhibition catalogue.

Funding from the T. M. Evans Foundation, Inc has been obtained to produce a new format for the descriptive brochure of the National Portrait Gallery. In FY 1985, a favorable reader's report was received by the Yale University Press, which set in place the publication of volume 2 of the Selected Papers of Charles Willson Peale and His Family. This large volume--which will be published in two parts--will be entitled Charles Willson Peale: The Artist as Museum Keeper, 1791-1810. In July 1985, the copy-edited manuscript was received from Yale University Press and illustrations and maps for the volume have been selected and prepared by the Peale Papers staff. Work has also begun on volume 3--The Artist in Retirement, 1810-1820. Currently being produced are

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The Portrait Engravings of C.B.J.F de Saint-Memin (in a copublishing arrangement between the Smithsonian Institution Press and the Barra Foundation) and a new edition of the Permanent Collection Illustrated Checklist.

Education - The National Portrait Gallery's public education program combines a daily schedule of docent-led tours and an array of intensive school and senior citizen outreach programs (such as a musical tribute to Cole Porter) conducted by trained education aides and docents. The Education Department's "Portraits in Motion" series of biographical dramatic presentations continues to provide highly popular programming. The "Lunchtime Lecture" series, has continued to grow in popularity and to draw both regular followers and new visitors who are interested in the specific topics being presented. The Department has begun planning ways to increase the use of special exhibitions by school groups and to investigate ways to serve the "gifted and talented" school audience. The Department continues to experiment with its own programs. For example, local junior high school students have been trained to interpret the NPG collections for their fellow students. Due to the increased educational activity over the past several years, the Department has reorganized its programs to assure the maintenance of high quality presentations. The Education Department hopes to develop an ongoing film and video project, and to schedule lectures and symposia directly related to the Gallery's special exhibitions.

Research - In FY 1985, the American Art/Portrait Gallery (AA/PG) library received a grant from the Women's Committee of the Smithsonian Associates to assist in organizing the Edgar Preston Richardson vertical file collection which was given to the AA/PG library in 1984 by Mrs. Richardson.

The AA/PG library is participating in the Smithsonian Institution Bibliographic Information System (SIBIS). Other Smithsonian units and the general public have access to the shared library on-line catalogue from SIBIS terminals and from other telecommunication vehicles. However, some 4,000 titles of early publications are still in Dewey Decimal classification and accessible only through the traditional card catalogue. Efforts will be made in the coming year to convert these records to the Library of Congress classification and into machine readable form.

The national portrait survey of the Catalogue of American Portraits continued in FY 1985. This survey, which is in its seventh year, is being conducted by a research center within the National Portrait Gallery. Field research in Texas, Oklahoma, and New Mexico, which will add approximately 1,500 additional portrait records to the Catalogue, will continue. By the end of this fiscal year some 26,000 records will have been processed and entered into the computer. In addition to facilitating the response to daily inquiries from museum professionals and the general public, the Catalogue has played an important role in securing materials for major studies of Raphaelle Peale, Henry Inman, Anders Zorn, and Frank Duveneck. This information has been of great use in establishing the groundwork for an exhibition of American portraiture from 1700-1776.

FY 1985, the Catalogue of American Portraits acquired two microcomputers. This has permitted direct entry of Catalogue information into the central record. In addition, the on-line capability afforded by the microcomputers allows the Gallery to provide better service to the public through increased accuracy and currency of information. Processing collected field data will continue, as will field survey work, to the extent that funds are available.

EXPLANATION OF PROGRAM INCREASE: Exhibitions and Performances ($80,000) - For FY 1987, an increase of $80,000 is sought to fund initial planning and research for a major exhibition in commemoration of the Bicentennial of the United States Constitution. The exhibition, which is scheduled to open in the spring of 1988, is titled "Portraits of Distinguished American Jurists." A second exhibition commemorating the Bicentennial of

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the Constitution, "The Portrait in America from 1700 to 1776" is planned for FY 1988 and is expected to be funded through the Institution's Special Exhibition Fund.

"Portraits of Distinguished American Jurists" will feature a selection of the most historically enlightening portraits of prominent members of the legal profession from the early years of our Nation's history to the present. While the primary purpose of this exhibition is to highlight images of individuals who have been pivotal interpreters and shapers of our legal institutions, the exhibition also will attempt to capture some sense of the backdrop against which the jurists acted and the circumstances surrounding the evolution of this country's legal processes and institutions. In addition, the exhibition promises to be a visually engaging survey of American portraiture as the portraits of these jurists tend to be of unusually good quality.

The Gallery has contacted other institutions regarding the possibility of borrowing works for this show. Among the institutions which have been approached is the Harvard Law School, which houses one of the oldest and largest collections of portraits of noteworthy lawyers in this country. The Harvard Law collection is a resource that until now has remained largely unknown and this exhibition will afford the public the rare opportunity to enjoy these treasures. In tandem with the exhibition, the Gallery will produce a catalogue, which will contain not only reproductions of objects featured in the show, but will include a text chronicling some of the most significant chapters in the history of American law. The exhibition is scheduled to open in the spring of 1988.

In FY 1987, $80,000 is requested to fund the early preparations for this Bicentennial exhibition: $50,000 will fund typesetting and publication costs of the catalogue, and $30,000 will be used for shipping and registrarial services. The total cost of the exhibition is expected to be approximately $200,000.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These are derived from several sources including the Gallery's share of sales in the restaurant and museum shop; sales of photographic reproductions of portraits in the collection; staff honoraria; and participation fees from museums to which National Portrait Gallery exhibitions are loaned. These funds are used to help defray the expenses of public lectures, symposia and special events in coordination with the opening of exhibitions; associated costs of loan exhibition development and management; and for the research expenses of staff who are preparing special publications or lectures. In addition, the Institution's Research Opportunity Fund and Special Exhibition Fund supported research and exhibition projects. In FY 1985, the total funding from these programs amounted to $16,000, providing support for four research projects and the exhibition "The Portrait in America from 1700 to 1776."

Restricted Funds - These funds are provided for specific purposes in the form of gifts and grants from individuals, foundations, organizations or corporations. The Catalogue of American Portraits is currently in the seventh year of a nationwide survey of American portraits. A grant of funds ($325,000) from the Andrew W. Mellon Foundation in 1977 made possible the implementation and continued operation of this extremely important project.

The Carter Inaugural Committee provided $15,000 toward the purchase of the portrait of President Carter in the Oval Office by Robert Templeton. Several other acquisitions were made possible by generous contributions from the Barra Foundation, The New Republic, Inc., Katie Louchheim and the CBS Television Network, and included a cabinet photograph of S. L. Clemens, Lena Horne by Edward Biberman, the Thomas Wentworth Higginson daguerreotype, and a large handmade paper print of Philip Glass by Chuck Close.

Support for the exhibition "A Truthful Likeness: Chester Harding and His Portraits" was provided by Harding descendants, Margaret L. Smith and Chester H. Lasell.

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The Sporting News Publishing Co. and the Eastman Kodak Co. cosponsored the exhibition "Baseball Immortals, 1905-1935: The Photographs of Charles Martin Conlon." The Lilly Endowment, Inc. and Gulf States Paper Corporation provided partial support for the opening of the exhibition "Peace and Friendship: Indian Peace Medals in the United States." While Merrill Lynch contributed toward the Covarrubias exhibition, the publication of the Covarrubias catalogue was made possible by an earlier grant from the Swann Foundation for Caricature and Cartoon.

Mr. Paul Mellon graciously contributed a partial subvention and the Barra Foundation has promised support for the publication, The Portrait Engravings of C.B.J.F. de Saint-Memin. The publication of this book culminates many years of research on the superb group of de Saint-Memin portraits that Mr. and Mrs. Mellon made available to the Gallery in 1974. The T. M. Evans Foundation contributed $15,000 for publication of the National Portrait Gallery brochure. In addition, the Lyndon Baines Johnson Presidential Library, through the LBJ Foundation, will provide the $10,000 needed to produce the Ulysses S. Grant exhibition catalogue.

In FY 1985, the Gallery received the first installment of a grant from the Lachaise Foundation in support of the exhibition and catalogue on the portrait sculpture of Gaston Lachaise. The Gallery also received substantial contributions for future activities and general support from the Clarence and Jack Himmel Foundation, the Ruth and Frank Stanton Fund, Robert L. McNeil, Jr., and smaller gifts from a number of individual donors.

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HIRSHHORN MUSEUM AND SCULPTURE GARDEN

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS: FEDERAL FUNDS		UNRESTRICTED FUNDS: General		UNRESTRICTED FUNDS: Special Purpose		RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1985 Actual	73	2,923	-	14	-	258	-	219	-	-
FY 1986 -Base	77	3,112	-	13	-	62	-	423	-	-
-PL 99-177***		2,985								
FY 1987 Estimate	77	3,233	-	13	-	66	-	197	-	-

* FTE = Full-time equivalent
** FTP = Full-time permanent positions
*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	77	-	77
11 Personnel Compensation	1,954	36	1,990
12 Personnel Benefits	199	5	204
21 Travel	32	11	43
22 Transportation of Things	206	9	215
23 Rent, Communications & Utilities	7	-	7
24 Printing & Reproduction	96	4	100
25 Other Services	200	40	240
26 Supplies & Materials	180	13	193
31 Equipment	82	3	85
Collections Acquisition	150	-	150
41 Grants	6	-	6
Total	3,112	121	3,233

Analysis of Increase

Necessary Pay	41
Inflation	40
Program Funds	40

ABSTRACT - The Hirshhorn Museum and Sculpture Garden (HMSG) was established by an Act of Congress (P.L. 89-788, November 7, 1966) and opened to the public on October 4, 1974. Its collection of art, soon to number more than 13,500 works, forms the basis of an active program of public exhibitions, catalogues relating to its collection and exhibitions, extensive research and a wide range of educational activities including film programs, lectures, concerts, publications and tours. For FY 1987, an increase of $40,000 is requested to enable the Museum to conduct research and to catalogue approximately 6,000 works of art added to the permanent collection in FY 1986. Necessary pay of

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$41,000 is required for existing staff and an amount of $40,000 is sought to compensate for the effects of inflation in nonsalary areas of expense.

PROGRAM - The active programs of the Hirshhorn Museum and Sculpture Garden over the last 11 years have resulted in the Museum attracting the highest visitation of any contemporary art museum in the United States. This information is based on a survey conducted by the American Association of Art Museums. As one of the major museums of modern and contemporary art in the United States, the Hirshhorn Museum operates active programs of research, exhibitions, acquisitions, collections management, and activities involving audiences of all ages.

Research - The Museum's resources include works of art, a curatorial file providing information on artists and works in the collection, and a library with 6,000 volumes. Works of art not on display are available to scholars and students for study by appointment. With the addition of the 6,000 works of art from the estate of the late Joseph H. Hirshhorn, the staff of the museum will be involved in researching the provenance of each work of art which will be added to the existing curatorial files. In coordination with the Office of Information Resource Management's Institution-wide automation plans, the Hirshhorn Museum's data base will be placed on a new system that ultimately will allow researchers and the public to retrieve information on-line from computer terminals.

Exhibitions - The Museum conducts an active exhibition program that draws upon works in its collection, as well as other collections. Approximately 700 works from the permanent collection are on display at any time. In FY 1985, the Museum organized two major exhibitions: "Content: A Contemporary Focus, 1974-1984" and "Representation Abroad: Diversity." The exhibition "Content: A Contemporary Focus, 1974-1984," was the second part of the tenth anniversary celebration of the Hirshhorn Museum. Nearly two hundred American and European works were shown in the exhibition which was organized as a unified overview of art of this decade. "Representation Abroad," a loan exhibition of 147 paintings, drawings, and sculpture, opened at the Hirshhorn Museum and Sculpture Garden on June 5, 1985. The 16 artists represented reflect the strengths and diversity of representational art being created in Australia, Colombia, France, Great Britain, Italy, Spain and West Germany. "Jim Dine: Five Themes," organized by the Walker Art Center, was also exhibited at HMSG during FY 1985.

A small exhibition, with an accompanying slide presentation, "Conservation of Modern Art," was financed by the Women's Committee of the National Associates. In addition, the Museum mounted several small exhibitions based on its holdings of works on paper. The Museum, in conjunction with the Smithsonian Institution Traveling Exhibition Service (SITES), circulated two exhibitions, "Artists and Models: Portraits from the Hirshhorn Museum and Sculpture Garden" and "Genre Scenes: Works on Paper from the Hirshhorn Museum and Sculpture Garden" to a total of 25 locations across the United States.

In FY 1986, the following are among the major exhibitions planned by the Hirshhorn Museum: "A New Romanticism: Sixteen Artists from Italy"; "Selections from the Collection of Gustave and Marion Ring"; "Directions 1986"; and "Selections from the Bequest of Joseph H. Hirshhorn." "Robert Arneson," organized by the Des Moines Art Center, will be shown at the Museum in FY 1986. Exhibitions based on the permanent collection will include "Relief Sculpture" and several exhibitions of works on paper. Exhibitions organized by the Museum that will travel in FY 1986 are "A New Romanticism: Sixteen Artists" to the Akron Art Museum, and "Surrealist Art: Selections from the Hirshhorn Museum and Sculpture Garden" which, through SITES, will go to seven locations.

In FY 1987, the following are among the major exhibitions scheduled: "Nancy Graves Retrospective," organized by the Fort Worth Art Museum; "Roger Brown," which will travel to several other museums; and "Morris Louis," organized by the Museum of Modern Art in New York.

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Collections Management - The Museum inventories its entire collection on a three-year cycle with spot checks made at least annually. In FY 1985, conservation on the outdoor sculpture involved treating every piece of sculpture that was in the garden and on the plaza. In early FY 1986, objects bequeathed to the Museum by Joseph H. Hirshhorn were moved into the building. The Hirshhorn Museum and Sculpture Garden transferred its African, Pre-Columbian, Eskimo, South Arabian and other "Special Collections" objects to the Freer Gallery of Art, the National Museum of African Art and the National Museum of Natural History. Similar works in the Hirshhorn bequest will also be offered to the Hirshhorn's sister museums at the Smithsonian.

Education and Public Orientation - To increase visitor appreciation and understanding of specific exhibitions and of modern art in general, the Museum provides visitors with a variety of educational materials, including explanatory wall labels and brochures. The latter range from a single page to illustrated minicatalogues and are distributed free of charge to the public.

The Hirshhorn Museum encourages visitation through its outreach program. Several film series are offered including a lunchtime series about artists and their work, an evening series of films by artist filmmakers, and a Saturday film series for young people. Events held in the auditorium include concerts by the 20th Century Consort and lectures by artists, critics and art historians. Occasionally, symposia are organized in connection with exhibitions.

"Currents," a free seminar for high school juniors, was developed by the Museum as a biannual program to familiarize students with trends and ideas represented in new works of art. Exploring the interrelationship of current history and art, the two and one-half hour program includes intensive gallery study, a slide overview and informal discussions. The comments and observations of the students will be published and made available to the public as a free, accessory exhibition handout.

Acquisitions - The legislation establishing the Hirshhorn Museum described its function as a "museum in Washington, D.C. where modern art could be exhibited and studied ... [to] ... enrich the culture of the Nation." In order to carry out this mandate, it is essential that the Museum's collection always include contemporary art and that the Museum keep abreast of current developments in the visual arts. To present an accurate account of esthetic developments on an international level, an active acquisitions program is essential. In FY 1986, the Museum was able to add one work of art purchased with appropriated funds, a painting by Frank Stella titled "Quaqua! Attaccait la!". Purchases using nonappropriated funds include Jean Dubuffet's painting "The Hunt of the Two-Horned Creatures"; Anselm Kiefer's painting, "The Book"; soft sculpture, "Soft Engine for Airflow, with Fan and Transmission," by Claes Oldenburg; Donald Sultan's painting, "The Plant"; and "Standing Deep's L.A.," a sculpture by Christopher Wilmarth.

EXPLANATION OF PROGRAM INCREASE - Research ($40,000) - In FY 1987, an increase of $40,000 is requested to enable the Museum to research and catalogue approximately 6,000 works of art added to the permanent collection.

In 1981, Joseph H. Hirshhorn bequeathed 6,000 works of art to the Hirshhorn Museum and Sculpture Garden. At that time the bequest was valued at $12 million and is worth significantly more today. The addition of 6,000 works to the Museum's permanent collection requires that extensive research be undertaken to cull duplicate works, and to provide biographical information on the artists not already represented in the Museum's collections. To initiate the incorporation of these works into the Museum's collections, a bibliographical and archival record will be prepared for each of the 6,000 new works, along with a comparative analysis of the relationship between the new works and the Museum's existing collections.

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The requested increase of $40,000 will allow the Museum to begin researching, photographing and cataloguing the 6,000 new works and will provide support for curatorial travel to conduct the necessary research. After the initial work to incorporate the bequest into the collection is completed, this funding will be required to process loan requests to other museums and for collection management purposes.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These funds are provided from several sources including the Museum's share of sales in the museum shop and plaza cafe and from other receipts such as fountain coins. A special purpose fund partially supported the exhibition, "Content: A Contemporary Focus, 1974-1984," for the tenth anniversary of the Museum (actual expenditures of $190,000 in FY 1985) and an allotment provided for the travel expenses of the Museum's Board of Trustees (estimated expenditures of $4,000 in FY 1986 and $5,000 in FY 1987). Funds also were made available to support in part the 20th Century Consort which has been performing at the Hirshhorn Museum and Sculpture Garden for ten years (estimated expenditures of $10,000 in FY 1986 and $19,000 in FY 1987).

Restricted Funds - The Museum hopes the funds bequeathed to it by Joseph H. Hirshhorn will be received by FY 1987. This amount has not been finally determined. The Museum has raised outside support from various sources to help acquire costly and important major works for the permanent collection (estimated expenditures of $400,000 in FY 1986 and $197,000 in FY 1987). To restore to the Hirshhorn Museum and Sculpture Garden the art acquisitions funds which, with the approval of the donor, Mr. Hirshhorn, were used for construction costs in 1973 and 1974, the Smithsonian Institution has established a restricted endowment fund for the Museum in the amount of $2,500,000, and a Special Purpose fund in the amount of $700,000 to be used immediately for art purchases (estimated expenditures of $400,000 in FY 1986 and $300,000 in FY 1987). The Board of Regents approved the establishment of this Special Purpose fund late in FY 1985 and, therefore estimated expenditures for FY 1986 and FY 1987 are not reflected in the "Application of Funds" Table.

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CENTER FOR ASIAN ART

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS: FEDERAL FUNDS		UNRESTRICTED FUNDS: General		UNRESTRICTED FUNDS: Special Purpose		RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1985 Actual	33	1,349	1	37	-	39	22	2,133	-	-
FY 1986 -Base	46	3,074	1	2,081	-	3	22	1,637	-	-
-PL 99-177***		2,946								
FY 1987 Estimate	68	4,106	1	1,567	-	3	22	1,582	-	-

* FTE = Full-time equivalent
** FTP = Full-time permanent positions
*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	46	22	68
11 Personnel Compensation	1,117	470	1,587
12 Personnel Benefits	139	60	199
21 Travel	17	10	27
23 Rent, Communications & Utilities	65	3	68
24 Printing & Reproduction	149	106	255
25 Other Services	616	26	642
26 Supplies & Materials	632	336	968
31 Equipment	239	17	256
Collections Acquisition	100	4	104
Total	3,074	1,032	4,106

Analysis of Increase

Necessary Pay	22
Inflation	76
Program Funds	934

ABSTRACT - The Center for Asian Art is comprised of the Freer Gallery of Art, established May 5, 1906, and the Arthur M. Sackler Gallery, established July 28, 1982. Both galleries are devoted to the acquisition, study, conservation, interpretation and exhibition of Asian art. The Sackler Gallery, scheduled to open to the public in mid-1987, will have an exhibition program that includes temporary loan exhibitions to and from other organizations which is not possible at the Freer because of the terms of the founder's will. The Freer Gallery of Art has a continuing program to display its collections as keys to understanding the civilizations that produced them. For FY 1987, an increase of 12 workyears and $862,000 is requested for the Sackler Gallery for

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activities to be held in the Quadrangle, including a major inaugural exhibition that will display the initial gift from Dr. Sackler of approximately 1,000 objects. A further amount of 10 workyears and $272,000 is required to annualize the partial-year funding for 17 positions approved in the FY 1986 budget for Quadrangle-related support. Necessary pay of $22,000 is required for existing staff and an amount of $76,000 is sought to compensate for the effects of inflation in nonsalary areas of expense.

FREER GALLERY OF ART

PROGRAM - The Freer Gallery of Art houses one of the most distinguished collections of Oriental art in the world, consisting of over 26,800 works of art from China, Japan, Korea, India and the Near East and spanning 5,000 years. Included in the collection are paintings, sculptures and other objects in stone, wood, lacquer, jade, pottery, porcelain, bronze, gold and silver, and Biblical manuscripts. "The Peacock Room" by James McNeill Whistler is a highlight of an outstanding collection of American art that Charles Lang Freer, the Gallery's founder, considered a bridge between the arts of the East and West. The unique Oriental collections in the Freer Gallery, together with notable holdings of American paintings, have made the Museum a center for students, scholars and the general public on an increasing basis. This growing interest has been manifested in a steady increase in visitors, in requests for museum tours, lengthy periods of advance bookings for authentication appointments, and the number of visiting scholars and dignitaries. Items not currently on exhibition are available to students and scholars for study. In addition to the collections, the Gallery houses a public library of approximately 30,000 volumes relating to the objects in the collections.

Research - Freer Gallery research facilities, the collections, curatorial staff, library and technical conservation laboratories, form the nucleus of its specialized public service. Research findings are made available to the public through exhibitions, catalogues of exhibitions, articles, free gallery leaflets and public lectures at the Freer as well as at other similar institutions. Updating the research files on individual pieces in the collection continues. These files are made available to visiting scholars and students as well as the general public.

The results of curatorial research are most visible in the Gallery's exhibitions. However, additional research results made available to the public can be found in collection research records, in lectures, and in published papers and books. Specific areas of research in Japanese art included an ongoing study of porcelains, the study of Hino and Sato wares, clan patronage of Japanese ceramics during the Edo period, calligraphy and theatre in the Edo period.

In the field of Chinese art, research continued on Chinese calligraphy and paintings of the Sung, Yuan, Ming and Ch'ing dynasties. Topics included K'un-ts'an (ca. 1612-1680) Mt. Huang and Chang Ta-ch'ien (1899-1983); the periodization of Yen Chen-ch'ing's (708-784) calligraphic influence; and Huang T'ing-chien's (1045-1105) cursive script and his influence.

The investigation of the development of Western connoisseurship of Chinese art continues. Of particular interest are the changes in the dating and qualitative assessment of Chinese artifacts in Western collections on the basis of information provided by recent archaeological finds in the People's Republic of China. While the initial focus was Charles Lang Freer and his collection, research expanded to include English and European collectors of the late 19th and early 20th centuries. A major presentation of the present status of this investigative research of Western connoisseurs was a lecture given at the National Palace Museum in Taiwan in October 1985, as part of that museum's 60th-anniversary celebration.

A comprehensive review of all literature on Chinese figure painting during the past 12 years has been conducted as part of the revision of the Freer catalogue, China Figure

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Painting. Originally published in 1973, this catalogue is the only study in this field and has been out of print for seven years.

In the field of Indian art, research during the last year focused on the art and architecture of 16th-century Mughal India. A primary interest has been the development and formation of a Mughal esthetic and the formulation of a methodology for approaching the works of art made for the Emperor Akbar during his years at Fatehpur-Sikri. Several publications resulted from this research as well as an international symposium on the art, architecture and culture of Fatehpur-Sikri that was part of the Festival of India. Research in the area of the Near East involved the exploration of the mechanisms by which Timurid art became codified and standardized and the impact on this process of Timur (Tamerlane), the founder of the Timurid dynasty.

The Technical Laboratory of the Freer Gallery is renowned for its research activities, in addition to the ongoing conservation and restoration of objects in the collection. Research included casting methods, corrosion, and lead-isotope ratios in Chinese bronzes; colors of the copper-tin-lead alloy system; Oriental painting materials, including pigments and inks; and technical examination of Islamic metalwork for the exhibition and catalogue mentioned below. Continuing research includes lead-isotope ratios in pigments and bronzes from Asia; studies on Chinese ink samples; identification of early Korean painting materials; deterioration mechanisms on East Asian paintings; corrosion on archeological metal objects; the dating of ancient silver from its microstructure; and improved methods for analysis of archeological metals. A survey of pigments on Japanese Ukiyo-e paintings in the Freer has been completed and is being reviewed for publication. In FY 1985, the Technical Laboratory also had two research fellows, one working for ten weeks primarily on materials and methods of fabrication of Indian bronze mirrors, and the other for a year to study the pottery of Kanzan (a 17th-18th-century Japanese potter) by both stylistic and technical means.

Conservation - In FY 1985, objects in various media (ceramics, wood, lacquer, metal, etc.) were treated, along with many Persian and Indian miniature paintings and also prints by the American artist James McNeill Whistler. Most of these treatments were done to put the objects in the best possible condition for exhibition. In addition, technical examination and treatment of objects intended for the Arthur M. Sackler Gallery began.

Exhibitions - Japanese exhibitions in the past year included "Japanese Calligraphy" which exhibited 14 hanging and hand scrolls and screens in an exhibition that featured traditional styles of Japanese writing and cursive styles developed during the 8th through the 12th centuries. Many objects were on public view at the Freer for the first time.

"Japanese Drawings" included the preliminary drawings that Katsushika Hokusai (1760-1849) made for a partially published series of woodblock prints. Some 35 brush and ink drawings by 19th-century artists were featured in this exhibition. The works by Hokusai illustrated the extraordinary care with which this master prepared his print designs. Also included were drawings by Gyosai (1831-1889) and others.

In the exhibition "The Glazed Ceramic Tradition of Seto and Mino" the evolution of glazed wares at Seto and Mino was illustrated by a number of rare early pieces, as well as by representative Momoyama period (1568-1615) wares. Centers for the development of glazed ceramics during Japan's medieval period (13th-16th centuries) were the neighboring pottery districts of Seto and Mino. In the 16th century, Chinese ceramic models were replaced by a colorful, eclectic, distinctively Japanese ceramic style for which Mino continued to be an important center. The "Kyoto Ceramics" exhibition presented the work of the major Kyoto ceramic artists as well as that of representative Kyoto pottery workshops of the Edo period (1615-1868). Witty design, refined workmanship, and colorful

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enamel decoration characterize the ceramic wares from Kyoto, the former capital of Japan and a great commercial center for luxury goods. Another Japanese exhibition that opened during FY 1985 was "Japanese Theater in the Edo Period." "Garden Potteries and Official Kilns: Clan-sponsored Ceramics in the Edo Period" opened in January and will close in August, 1986. Both exhibitions dealt with topics not previously explored through exhibitions at the Freer Gallery.

Chinese exhibitions included "Masterpieces of Chinese Painting" which was presented in conjunction with the exhibition, "The Treasures from the Shanghai Museum," shown in the National Museum of Natural History. The "Masterpieces of Chinese Painting" included important paintings dating from the Sung through the Ch'ing dynasties. "Ming Dynasty Calligraphy and Painting" presented comparisons of calligraphy and painting by 40 different artists of the Ming dynasty (1368-1644) through a selection of 25 hanging and hand scrolls. "Painting and Calligraphy from the Ch'ing Dynasty" exhibits approximately 30 masterpieces of Ch'ing dynasty (1644-1911), plus new acquisitions from the same period. The calligraphy includes early scripts such as clerical and seal script. The paintings feature masters of the orthodox school as well as the individuals. This show provides a sequel to the exhibition of similar types of works from the Ming dynasty mentioned above.

Indian exhibitions included "The Arts of South Asia." As part of the Festival of India at the Smithsonian, the Freer presented paintings and sculpture representing a complete survey of its collection of art from the Indian subcontinent. Among the objects in the exhibition were a stone relief (ca. 200 A.D.) from the Gandharan region of Pakistan, depicting the Four Great Events in the life of Buddha (his Birth, Enlightenment, First Sermon and Death); a 10th-century bronze sculpture of the goddess Parvati, consort of the Hindu god Shiva and a symbol of earthly fertility and divine beauty; and an imperial portrait of the Mughal Emperor Jahangir (ca. 1615 A.D.). A recent acquisition, a Rajput painting from the Punjab Hills (ca. 1660 A.D.) showing the goddess Devi being worshipped by the three great Hindu gods (Brahma, Vishnu and Shiva), is an example of one of the earliest and most dramatic styles of Hindu painting from the region. To coincide with the nationwide celebration of Indian traditions and culture, the Freer also awarded the Freer Medal to Dr. Stella Kramrisch, an outstanding scholar in the field of Indian art.

Near Eastern exhibitions included "From the Hand of Mani: Iranian Paintings from the Freer," which included 32 pages representing the Freer's finest Iranian manuscripts. This exhibition showed the development of an Iranian idiom in manuscript painting between the 14th and the 16th centuries. Among the paintings on view are pages from the "Haft Awrang" of Jami (1336-1565), the "Khamseh" of Nizami (early 15th century), and the Demotte "Shahnama" (early 14th century). Artists who executed these works drew symbolic inspiration from Mani, a legendary painter who became the ideal of artistic creativity in Iran.

"The Riza-i Abbasi Album" includes 27 drawings, many of them signed and dated by or attributable to Riza-i Abbasi, acknowledged by art historians to have been among the greatest artists of Iran's Safavid empire (1502-1736). The drawings are part of an album obtained by the museum in 1953 from the collection of Friedrich Sarre, a German art historian who, working around the turn of this century, pioneered the study of Islamic art. Also included in the exhibition are six Persian ceramics and 11 other 16th- and 17th-century Persian album paintings.

The "Islamic Metalwork" exhibition, which opened last fall, is a detailed exploration from both the technical and esthetic points of view. This show features 37 intricately crafted examples of vessels, plates, ewers, weapons and other objects in brass, silver and gold, showing the development of metalwork in the Islamic world from the 7th-8th through the 17th centuries. An illustrated catalogue accompanied the exhibition.

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A joint exhibition of Chinese, Japanese and Near Eastern calligraphy is planned for the summer of 1986 in conjunction with the International Congress for the History of Art to be held in Washington, D.C. in August. This Asian calligraphy exhibition will include approximately 55 objects (16 from Japan, 20 from the Muslim world and 19 from China). A catalogue will accompany the exhibition.

Collections Acquisition - In FY 1985, Federal funding was provided for the first time for collections acquisition for the Freer Gallery. These funds were used to purchase a pair of 17th-century Japanese screens and a 7th-century Sasanian metalwork dish. The Sasanian dish is an extremely important example of 7th-century Iranian metalwork. Its finely crafted silver body and gilt decoration reflect imperial workmanship. The dish's significance, however, is not confined to its beauty. Its symmetrically arranged decorative program shows the impact of Islamic taste and indicates the dish's transitional position between the old ideals of the Sasanians and the new interests of the Muslim conquerors of Iran. Only a few other objects of this nature exist and none of them are of the quality of the Freer dish.

The pair of six-panel Japanese screens depicts a stylized bridge in silver-leaf, spanning the width of both screens. Budding willows and weeping cherries in bloom hang gracefully over the bridge, set off against the gold-leafed background. From the branches of the trees hang poem-slips (tanzaku), decorated paper strips inscribed with poems in fine calligraphy and actually applied to the screen. The screens are datable to the early 17th century and are stylistically similar to works by painters of the Hasegawa scroll, who were known for their large-scale paintings on sliding doors and screens. These screens are an important addition to the collection because they are the only calligraphic screens of this type in the collection and they are rare.

Recent additions to the collection with Freer nonappropriated Trust funds include Japanese ceramics, a wooden sculpture, calligraphy, paintings and a bronze; Chinese calligraphy, painting and a set of cricket cages; Indian paintings; and a Korean ceramic. Donations to the collections included Japanese ceramics, paintings, lacquer; Chinese bronze, ceramics, jade, glass and painting; and Turkish calligraphy.

Education - The Freer Gallery carries out a wide range of research and scholarly activity which is made available to the public in a number of ways. As part of the Freer's education program during FY 1985, the Gallery offered six free public lectures on various subjects that related to the collections. This popular lecture program continued with two lectures given in the fall of 1984 and four more given in the spring of 1985. Other parts of the education program include a free introductory brochure given to the visiting public and mailed to individuals and groups who write for general information on the Freer; a free introductory brochure for the visually impaired; the continuation of the highly successful free exhibition leaflets introducing various aspects of the Gallery's collections; and tours given by docents. In FY 1985, over 19,000 visitors joined the weekday and weekend tours given four times daily.

A catalogue on "Islamic Metalwork in the Freer Collection" was published in September 1985 to accompany the exhibition entitled, "Islamic Metalwork in the Freer Gallery of Art." Educational outreach continues through a new education program currently being developed for the elderly and the young. Currently, slide sets are available for docents to show to community groups. Pre-visit education packets are sent to schools prior to their tours of the Freer Gallery. Tours covering specific areas of the collection are presented to school and community groups studying specific areas of Asian art.

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ARTHUR M. SACKLER GALLERY

PROGRAM - The primary goal of the Sackler Gallery is the advancement of the scholarly appreciation and public knowledge of Asian art. Toward this end, Dr. Arthur M. Sackler agreed to donate a collection of nearly 1,000 objects in the fields of Chinese, Indian, Southeast Asian, Near Eastern and Japanese art to the Smithsonian. This collection includes Chinese jades spanning a period from Neolithic times (5000 B.C.-1500 B.C.) to the 19th century; Chinese bronzes from the Shang (ca. 1523 B.C.- ca. 1028 B.C.) through the Han (206 B.C.- 220 A.D.) dynasties; and Chinese painting, Chinese lacquer, Near Eastern ceramics and metalwork, and sculpture from Cambodia, India and Thailand. During FY 1986, these objects will be moved from temporary storage space at the Smithsonian's Museum Support Center in Suitland, Maryland to the new facilities of the Sackler Gallery, after the Smithsonian has received beneficial occupancy of the Quadrangle. The public opening of the Sackler Gallery is scheduled for mid-1987.

Research - Research is the fundamental focus of the Sackler Gallery, providing the basis for exhibitions, publications and collections acquisitions. The research program involves both visiting scholars as well as the curatorial staff. Additionally, it is anticipated that the Asian art history journal Artibus Asiae, now totally funded by the Sackler Foundation, will be produced by the Gallery (although its contents will be independent of the Sackler Gallery programs and collections.) It is also planned, however, to publish a journal of scholarly research devoted to Sackler Gallery exhibitions and collections. These two journals would make the Gallery a major center for research publications on Asian art history. Exhibitions, exhibition catalogues and lectures at the Gallery will be generated from specific research projects. The Gallery's publications program will also include a quarterly bulletin intended for the general public. The bulletin will have color plates and informative text relating to the permanent collection, recent acquisitions and special exhibitions. Free leaflets will be provided in the exhibition galleries.

Conservation - The Sackler Gallery has a responsibility to protect and conserve the art objects under its purview. This includes the objects in the permanent collections, in loan exhibitions held in the Gallery, in Sackler-organized traveling exhibitions, and in Asian objects from other Smithsonian museums. Following the long practice of the Freer Gallery, the Sackler conservation efforts include object research to understand the origin of objects and therefore better develop the proper treatment of them. Expansion of the conservation facilities in a renovated Freer building will accommodate the requirements of the Sackler programs.

An expanded Oriental painting conservation program also is being planned. The Oriental art restoration studio takes a more traditional approach toward the conservation of East Asian paintings and screens than do Western conservation laboratories. Besides the work related to the Sackler collections and exhibitions, the studio also looks forward to a future program to train Americans in order to alleviate the critical shortage in this country of persons skilled in this specialized field. There are only three facilities in the United States capable of restoring and mounting rare East Asian paintings and screens, and they are occupied fully with the works in their respective museums.

Exhibitions - An extensive exhibition program is envisioned. The inaugural exhibition in the new building will display the initial Sackler gift together with other major objects on loan from the private collection of Dr. Sackler. The program will include exhibitions originated by the Gallery as well as traveling exhibitions organized elsewhere. Exhibitions will be drawn from international public and private collections as well as from the Sackler collection. It is expected that many Gallery-organized exhibitions will travel to other museums and institutions. Possible international traveling

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exhibitions include "Indus Valley Civilizations," "Buddhist Art of Pakistan," "Timurid Art of Iran," "Chinese Painting of the Che School," "Mughal Gardens," and "Photographs by Raghubir Singh." Other considerations for future exhibitions are Chinese mirrors, Ordos bronzes, Chinese lacquer, Indian and Southeast Asian sculpture, Chinese garment hooks, Sasanian metalwork, Chinese furniture, Near Eastern ceramics, Far Eastern ceramics, and Chinese sculpture. Research catalogues will accompany these exhibitions.

Education - In addition to the publication programs, the Sackler Gallery will attract a large number of research scholars and will have an active program for awarding research fellowships. Fellowship recipients would work closely with curators on topics related to the collections. Such a program has already begun. A grant from the Rockefeller Foundation has made it possible to establish a Rockefeller Foundation Residency Program in the Humanities at the Smithsonian Institution. The grant, which supports residential fellowships in Asian and African art, will provide two to three postdoctoral appointments each year beginning in 1985 and continuing through 1988. The Rockefeller Residency Program differs from existing fellowship programs in that it allows the fellows direct involvement in the plans and programs of the museums, and participation in symposia, exhibitions and publications.

Other scholarly grant programs are being explored to further the research and education programs that will utilize the collections and exhibitions at the Sackler as well as enhance the scholarship of Asian art.

A classroom has been planned for the Center for Asian Art for use in conjunction with local schools, colleges and universities. Programs will be developed to allow students at secondary, undergraduate and graduate levels to participate in symposia and seminars and come into direct contact with major works of art and distinguished scholars and curators.

The development and growth of the many programs at the Sackler Gallery will mean greater demands on the existing staff of the Center. Additional support staff for appropriate existing departments continues to be necessary.

Collections Acquisition - The Sackler Gallery will continue to acquire art objects in those fields of central interest to the museum, e.g., the arts of Asia in its broadest terms from Japan to the Near East. Objects acquired for the collection in the future will continue to be of high quality with respect to esthetic standards, cultural history and physical condition. Objects may be acquired by gift, bequest or purchase, provided that they meet established acquisition criteria. Since Dr. Sackler's initial gift, several items have been added to the Sackler collection. These include a Japanese palanquin or carriage, one Chinese lacquer and one Chinese bronze, an Indian manuscript, a selection of Japanese ceramics and prints, a selection of Asian objects transferred from the Hirshhorn Museum and Sculpture Garden and the Vever collection of Islamic and Persian paintings.

Explanation of Program Increase - Quadrangle - related Programs (22 workyears and $934,000) - For FY 1987, an increase of 12 workyears and $662,000 is requested for the expanding programs of the Sackler Gallery, including the installation of the inaugural exhibition and preparation of subsequent exhibitions (4 workyears and $389,000); automation (1 workyear and $25,000); collections management (2 workyears and 42,000); research (3 workyears and $70,000); and education and public orientation (2 workyears and $136,000). A further amount of 10 workyears and $272,000 is required to annualize the partial year funding for 17 position approved in the FY 1986 budget for Quadrangle-related support.

-- Exhibitions (4 workyears and $389,000): For FY 1987, four additional positions (4 workyears and $79,000) are requested for the exhibition program at the Sackler

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Gallery. Two museum technicians are required to assist with the installation of the inaugural exhibition in FY 1987, as well as future exhibitions developed by the Sackler and traveling exhibitions mounted in the Gallery. (One position approved in FY 1986 for the Sackler has provided initial support for the preparation of objects for the inaugural exhibition and other exhibition work.) A graphics technician also is needed to assist the graphics designer (approved in FY 1986) in the production of graphic work for the Sackler Gallery's exhibition and publication programs. A woodcrafter assistant would be hired to supplement the current cabinet shop staff. These positions will enable the Sackler Gallery to undertake the full exhibition program anticipated at its opening and in the future.

With funding provided in FY 1986, an exhibition base of $1.2 million has been established for the Sackler Gallery. In addition to this base for the ongoing exhibition program a one-time increase of $310,000 is needed in FY 1987 to support the initial installation of the exhibition galleries and the inaugural exhibition. These one-time costs represent the extraordinary expense of developing exhibitions for all of the exhibition spaces in the new museum at the same time.

--Automation (1 workyear and $25,000): A systems administrator (1 workyear and $25,000) is requested to oversee and ensure the appropriate growth of the automation facilities of the Center for Asian Art. This position will provide the necessary guidance and comprehensive planning to develop and enhance automation applications for the research, collections management and office automation requirements of the Center. An important part of this effort will be the establishment of shared systems and of connections with the Smithsonian's new central computer through a joint effort of the Smithsonian's Office of Information Resource Management and the Center's systems administrator. Furthermore, the systems administrator will be responsible for the training of research fellows and guest curators to enable them to use the computer equipment and software and to assist researchers when problems develop. Moreover, the systems administrator will provide support for the implementation of the Research Library Information Network computer system (with the Chinese, Japanese, and Korean enhancement) for the Center for Asian Art library to give general visitors and scholars access to library card catalogues, research libraries information networks, and collections information in the Center's fields of interest.

In FY 1987, the base of $67,000 will be used to purchase seven computers for the administrative offices, the registrarial office, the curatorial office and the library ($29,000); to establish communications support between the 30 computers within the Center for Asian Art and with the central Smithsonian computer ($36,000); and to upgrade existing software ($2,000). In FY 1988 and following years, this level of funding will be used for maintenance of the equipment, and for the purchase of additional equipment, software, and related supplies.

-- Collections Management (2 workyears and $42,000): For FY 1987, two additional positions are requested to support the collections management program at the Sackler Gallery (2 workyears and $32,000). A new photographic technician will assist the two photographers currently on the Freer staff and the photographer provided in FY 1986 for the Sackler with the increased printing and paperwork associated with the Sackler Gallery's photographic work, especially in the areas of collections management and publications. A second position is requested for a museum technician to assist with the registrarial care and management of the objects in the Sackler collections. A sum of $10,000 also is requested to support the operations of the restoration studio, including supplies and materials used in the conservation of art objects such as silks, papers, pastes, scroll tips and miscellaneous fittings ($5,000); travel costs of visiting specialists from East Asia and for sending apprentice or junior specialists for advanced training in East Asia ($3,000); and language training for East Asian specialists visiting the Center for Asian Art and for apprentices in the studio ($2,000).

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-- Research (3 workyears and $70,000): The growth of the Sackler collection will vastly increase the responsibilities of the present Center for Asian Art staff, especially in the areas of Chinese and Near Eastern art, where the collection holdings are particularly large and important. To maintain the level of scholarly research established by the Freer and to provide a comparable level of support for the Sackler Gallery, an additional curatorial position and a secretary (originally requested in FY 1986) are needed (2 workyears and $48,000). A sum of $6,000 also is requested for curatorial and research travel costs.

The assistant curator is expected to have particular expertise in ancient Near Eastern art history and to engage in research projects related to the ancient Near Eastern objects in the Sackler collection. This specialist, who would complement the expertise of the Freer curator specializing in Islamic art, would also provide invaluable support in research documentation required for the inaugural exhibition catalogue.

The addition of a slide and photograph librarian (1 workyear and $16,000) also is requested to maintain the day-to-day processing activities of the slide and photographic archives. This position would assist the visual resources librarian, who is responsible for developing and augmenting various visual research collections such as the Ernst Herzfeld and Myron Bement Smith Archives, the photographic archives and the slide collections. The slide and photograph librarian will care and maintain these collections and will manage the loan program of these visual resources to the public and to scholars, including the increased number of research fellows to be sponsored in the Center for Asian Art.

-- Education and Public Orientation (2 workyears and $136,000): To strengthen the education and public service capabilities of the Sackler Gallery, two positions (2 workyears and $36,000) are requested. During FY 1987, as the opening of the Sackler Gallery approaches, public interest in this new Smithsonian museum will intensify. The Public Affairs Office will be responsible for all press material and events; handling public inquiries; writing articles, general brochures and gallery guides; maintaining a public information calendar; and providing information and biographies of staff as appropriate. An assistant to the public affairs specialist (provided in FY 1986) is requested to handle the expanded workload of the Office in FY 1987 and following years.

The Sackler Gallery plans to publish four to six exhibition research catalogues each year as well as about a dozen brochures or gallery guides relating to specific exhibitions. An editorial secretary is needed to provide necessary clerical and publication support for the editor (provided in FY 1986). In addition, a sum of $100,000 is requested to establish base funding for the preparation and publication of catalogues, exhibition and gallery guides, leaflets and introductory brochures. Additional outside funding will be sought to supplement this base.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These funds are provided from allotments and are used to defray the costs of special events associated with the opening of new exhibitions and to cover the travel costs of members who attend the Center's Visiting Committee meetings. These funds also support the position of coordinator for special programs in the Center.

In FY 1986, the Sackler Gallery was very fortunate to acquire the Vever Collection, one of the finest collections of Persian art ever assembled, consisting of 39 volumes, 291 miniatures, 98 calligraphies and illuminations, 29 bookbindings, 4 textiles and examples of almost all of the classical Persian texts known. Funds allotted for the

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purchase of this collection include $3,500,000 in FY 1986 and $1,500,000 in FY 1987 with the balance of $2,000,000 to be funded through Smithsonian's Institution Trust funds and private contributions. Additionally, during FY 1985, funds from the Collections Acquisition, Scholarly Studies and Educational Outreach Program were used to purchase art objects for the Freer Gallery collection.

Restricted Funds.- The major portion of the nonappropriated Trust funds used by the Center stems from the Charles Lang Freer bequest and is restricted by the conditions stipulated in that document. The funds are used to help finance the Freer's professional curatorial staff, administrative staff, acquisitions for the collection and library, the maintenance of the Freer's courtyard and the operation of the Freer museum shop (estimated expenditures of $1,519,000 in FY 1986 and $1,567,000 in FY 1987). Funds from the Harold Stern Memorial Endowment support scholarly research in the field of Japanese art (estimated expenditures of $62,000 in FY 1986 and $12,000 in FY 1987).

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ARCHIVES OF AMERICAN ART

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
			General		Special Purpose					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1985 Actual	17	732	-	2	-	-	17	994	-	-
FY 1986 -Base	18	894	-	4	-	-	16	1,201	-	-
-PL 99-177***		858								
FY 1987 Estimate	18	931	-	4	-	-	16	1,107	-	-

* FTE = Full-time equivalent
** FTP = Full-time permanent positions
*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	18	-	18
11 Personnel Compensation	644	4	648
12 Personnel Benefits	80	1	81
21 Travel	21	1	22
23 Rent, Communications & Utilities	15	-	15
24 Printing & Reproduction	21	1	22
25 Other Services	64	28	92
26 Supplies & Materials	27	1	28
31 Equipment	22	1	23
Total	894	37	931

Analysis of Increase

Necessary Pay	5
Inflation	7
Program Funds	25

ABSTRACT - The Archives of American Art is a national research bureau with a network of regional centers across the country. It is the Nation's largest repository of documentary and source materials relating to the history of the visual arts in the United States. The Archives' collections contain more than eight million documents; 400,000 photographs; 75,000 works on paper; and approximately 3,000 tape recorded oral history interviews. The original material in these collections is housed in Washington, D. C., while microfilm copies of the collections are held in regional centers in Boston, New York, Detroit, San Francisco and Los Angeles. Special collecting projects are active in Philadelphia and Chicago, and in Rhode Island and throughout the South. For FY 1987, an increase of $25,000 is requested to conduct research for a series of

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interpretive publications based on the collections of the Archives of American Art. Necessary pay of $5,000 is required for existing staff and an amount of $7,000 is sought to compensate for the effects of inflation in nonsalary areas of expense.

PROGRAM - The Archives of American Art promotes the study of American art and cultural history by providing fundamental documentation for research and publication. The Archives' continuous accumulation of letters, diaries, sketchbooks, business papers, photographs, oral history interviews, and prints, and the ready availability of these resources and other forms of primary records to researchers and the lay public advances the scholarly analysis and interpretation of the arts in America. This is reflected in the numerous books, articles, dissertations, graduate papers, and exhibition catalogues which have drawn upon the resources of the Archives.

Founded in 1954 as a private institution in Detroit, the Archives became a bureau of the Smithsonian in 1970 following a resolution by the Board of Regents of the Smithsonian and the drafting of an agreement between the Archives' Board of Trustees and the Institution. The Archives' Board of Trustees provides advice and assistance to the Board of Regents and to the Secretary on all matters relating to the Archives.

Research - The effectiveness of the Archives is measured by the extent to which its collections are used. During FY 1985, 3,200 research visits were made to the various centers and 1,700 rolls of microfilm were lent to researchers from the United States and abroad. Research conducted at the Archives has resulted in more than 200 books, articles, exhibition catalogues, dissertations, and formal papers published or delivered this year. Information on the Archives' holdings is obtained from an ever-expanding catalogue (a published supplement was added this year to an earlier ten-volume set); various inventories and other finding aids; descriptions published in the Archives' quarterly Journal; and from talks and reports given by the staff to the scholarly community.

To reach an ever-widening audience, FY 1986 will witness an increased emphasis on staff research and publication. The Archives' Journal will continue to concentrate on editing and publishing significant materials from the collections, including letters, journals, photographs, and oral history interviews. In FY 1987, the Archives will prepare the first of a separate series of documentary volumes on the Federal art projects of the 1930s.

Development of Collections - During the past year, the Archives has received 226 collections of papers covering precisely two centuries--ranging from a 1783 letter to the uncle of Samuel F. B. Morse to the correspondence of Clement Greenberg, which extends into 1983. In addition, the new acquisitions include letters written by and to the 19th-century architect Robert Mills, who worked on three buildings which are now part of the Smithsonian; some Morse family letters; the records of the influential Chicago art critic Clarence Bulliet and of the New York critics Clement Greenberg and Thomas Hess; papers of the painter and theorist John Graham; the papers of Jackson Pollock and his wife, Lee Krasner, two of the best known figures in 20th-century American art; Stuart Davis material which gives insight into artists' organizations of the 1930s; the complete records of the Betty Parsons Gallery, which contain significant information on the American art market after World War II; a substantial collection of Marcel Breuer papers; and the voluminous files of the Institute of Contemporary Art in Washington, D. C., which record the history of a thriving 1950s organization whose aim was to bring contemporary culture to the Nation's Capital. In a particularly appropriate acquisition, the Archives received the personal and professional papers of its founder, the eminent art historian Edgar P. Richardson.

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The Archives' Oral History Program continues. Thirty-five taped interviews were made this year with such artists as Aaron Bohrod of Chicago, Myron Stout of Provincetown, and Richard Diebenkorn of California. Among other influential art world figures interviewed were Nelson W. Aldrich, George C. Seybolt, and Robert Carlen. The Archives also conducted extensive videotaping sessions with David Hockney in Los Angeles and Marshall Fredericks in Detroit.

Surveys of art-related records in Philadelphia and Rhode Island will be completed in FY 1986. Examination of the holdings of New York institutions continues, as does a survey of documentary materials in the South. In FY 1985, the Archives began a two-year project in Chicago to microfilm art-related archival collections in institutional and private hands. Funding for these activities comes from foundation grants which were obtained by the Archives.

Exhibitions - Due to a lack of space, the Archives of American Art does not display its choicer holdings. The Archives, however, does lend selected items to museums to complement their art exhibitions. In FY 1985, these loans included several illustrated letters from American architects which were lent to the Massachusetts Institute of Technology; sketches by Harrison Cady which were lent to a Cady exhibition at the University of Tennessee; records of the American Abstract Artists group which were lent to the Museum of Fine Arts in Houston; letters and other documents related to J. A. M. Whistler which were lent to Knoedler and Company; and John Haberle sketches which were lent to the Museum of Fine Arts in Springfield, Massachusetts.

Public Education - The educational activities of the Archives include symposia, staff lectures, participation in conferences, art tours, and publication of the quarterly Archives of American Art Journal. During this past year, the Archives organized and cosponsored "Los Angeles in the 1940s," a symposium on Southern Californian culture during and after World War II. Planning is under way for a conference on New Deal art and a published guide to the available documentary material on that subject; both are scheduled for next year. In FY 1986, From Reliable Sources, an extensively illustrated catalogue of selections from the collections, will be republished. This volume will emphasize the use of documentary records in historical research.

Conservation and Care of Collections - The process of identifying, photographing, and describing the 75,000 drawings, sketches, prints, and other visual objects in the Archives' collection of works on paper continued in FY 1985. To date, some 12,000 items have been recorded, many of substantial esthetic and historical value. With funds appropriated in FY 1986, this important work will continue. The Archives will also begin an inventory of its collection of photographs to establish the size of the collection and to determine the conservation measures which are required. Automation of collection records is well under way, and the application of computer technology to the cataloguing of collections was begun and will receive dedicated effort in FY 1986.

A further description of the Archives' inventory plans is included in the Collection's Management/Inventory sections of this budget request.

EXPLANATION OF PROGRAM INCREASE - Research ($25,000) - For FY 1987, an increase of $25,000 is sought to establish a base to publish a series of interpretive works on the collections of the Archives of American Art.

In the past, publications by the staff of the Archives were limited by insufficient funds. Those funds which were available for publishing were secured from small general operating funds, or from foundations and private sources, and were devoted mostly to reference works--printed card catalogues and guides. Chief among the many possible publications being explored by the Archives is a descriptive guide to the collections pertaining to the history of the Federal art projects of the 1930s. The Archives of

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American Art possesses the broadest documentation of the projects--artists' personal papers, oral history transcripts, and copies of the official records. A series of essays on the art of the period by leading scholars and Archives staff, coupled with a descriptive guide to the collections, would be a significant contribution to the 50th-anniversary decade of these Federal programs.

An increase of $25,000 for FY 1987 would provide the funds necessary to engage a recognized scholar to write a description of the collections reflecting the history of the Federal art projects of the 1930s, establish a stable base for publications and allow the Archives to publish important scholarly works based on the collections and offer informative publications to the general public. In subsequent years, funding would be used to complete this endeavor, including the design, typesetting and printing of an estimated 350-page book. Once the project has been completed, the funding would be applied to other publications. Among the ensuing publications is a group of interpretive articles on the American Academy in Rome, whose records are held by the Archives. The effect of this classically oriented "graduate school" of fellows on the art, architecture, and urban design of the American city from 1895 until 1940 has yet to be assessed. In addition, a series on sources and documents in the history of American Art would be published, which would present important documents from the collections and interpretive essays. This work would be suitable for use in undergraduate and graduate programs as a supplement to textbook instruction.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These funds are provided to defray costs associated with special events and to supplement travel expenses incurred by the Archives' Board of Trustees. With partial support from a Special Purpose fund, the Archives will publish its new edition of From Reliable Sources, a publication which is the chief means of informing the public of the important documents in the Archives collections, the use of documentary records in historical research, and the role of the Archives in preserving the records of American cultural history.

Restricted Funds - These funds are generated through fund-raising activities, the solicitation of gifts, as well as foundation and corporation grants, and a membership program. A substantial portion of this income is used to support the Archives' general operating expenses, including 16 full-time employees, its Oral History Program, and the publications program.

Foundation and corporation grants have provided the principal sources of support for special projects. Collecting projects funded by the Luce Foundation in the South, Philadelphia, and Rhode Island will be completed in FY 1986 (estimated expenditures of $88,000 in FY 1986). Development of a film on the Archives' programs to reach a wider audience through television and other visual means will be completed in FY 1986 through a grant from the Robert Wood Johnson Charitable Trust (estimated expenditures of $59,000 in FY 1987). In FY 1984, the Archives opened its Southern California Research Center, which is housed at the Huntington Library and Art Gallery and funded entirely by local contributions (estimated expenditures of $98,000 in FY 1986 and $104,000 in FY 1987). Support in FY 1986 and FY 1987 will be sought for a special Chicago collecting project (estimated expenditures of $69,000 in FY 1986 and $64,000 in FY 1987) and for contractual field collectors in the South, Minnesota, Missouri and other targeted areas (estimated expenditures of $86,000 in FY 1986 and $75,000 in FY 1987).

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COOPER-HEWITT MUSEUM

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS: FEDERAL FUNDS FTP*	FEDERAL FUNDS Amount	UNRESTRICTED FUNDS: General FTP**	General Amount	Special Purpose FTP**	Special Purpose Amount	RESTRICTED FUNDS FTP**	RESTRICTED FUNDS Amount	FEDERAL GRANTS & CONTRACTS FTP**	FEDERAL GRANTS & CONTRACTS Amount
FY 1985 Actual	26	880	20	720	5	944	1	422	-	69
FY 1986 -Base	26	942	20	733	5	1,141	1	880	-	50
-PL 99-177***		903								
FY 1987 Estimate	26	1,011	20	737	5	1,037	1	1,063	-	50

* FTE = Full-time equivalent
** FTP = Full-time permanent positions
*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	26	-	26
11 Personnel Compensation	728	11	739
12 Personnel Benefits	78	2	80
21 Travel	5	-	5
23 Rent, Communications & Utilities	14	1	15
25 Other Services	53	52	105
26 Supplies & Materials	60	3	63
31 Equipment	4	-	4
Total	942	69	1,011

Analysis of Increase

Necessary Pay	13
Inflation	6
Program Funds	50

ABSTRACT - The Cooper-Hewitt Museum opened its doors to the public in October 1976 as the Smithsonian Institution's National Museum of Design. Housed in New York City's national landmark, the Andrew Carnegie Mansion, and in the adjacent Miller House, the Cooper-Hewitt has world-renowned collections that include drawings, prints, textiles, wallcoverings, furniture, jewelry, glass, ceramics, metalwork and other examples of decorative and applied arts representing three millenia and dozens of cultures. The Museum is a leading international center for the study and interpretive display of the arts of design. With over 167,000 items in its inventoried permanent collections, the Cooper-Hewitt is responsible for the third largest group of objects in any single Smithsonian museum and more than twice the number inventoried by the rest of the Smithsonian's art museums combined. For FY 1987, an increase of $50,000 is requested to reinforce the Cooper-Hewitt's research capabilities in the Department of Drawings and

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Prints and the Department of Decorative Arts. Necessary pay of $13,000 is required for existing staff and an amount of $6,000 is sought to compensate for the effects of inflation in nonsalary areas of expense.

PROGRAM - The Cooper-Hewitt Museum is a center for collections, exhibitions and educational activities which explore the processes and products of historical and contemporary design. The Museum was established as the Cooper Union Museum for the Arts of Decoration in 1897, a hands-on working laboratory for the benefit of anyone interested in design. Through the generosity of several benefactors, extraordinary resources were assembled and made available for study. The Cooper-Hewitt has since been acknowledged as one of the most distinguished "working" collections of its kind in the world.

In 1967, the Museum collections and library were transferred by the Cooper Union to the Smithsonian Institution and renamed the Cooper-Hewitt Museum, the Smithsonian Institution's National Museum of Design. Today, the Museum is housed in a national and city landmark, a 1902 mansion built as the residence of philanthropist Andrew Carnegie, and in an adjacent townhouse. These properties were given to the Institution in 1972 by the Carnegie Corporation as a permanent home for the Museum. The Cooper-Hewitt is one of the principal attractions of New York City's famous "Museum Mile" on Fifth Avenue.

The Cooper-Hewitt would not exist in its present form without substantial private funding. It is only through extensive fundraising and careful management that the Museum is able to offer its ambitious exhibition schedule year after year. The following review of the Museum's major accomplishments in FY 1985, and its plans for FY 1986 and beyond, therefore reflect predominantly Trust-funded activities.

Exhibitions - The Museum presents between 12 and 16 exhibitions each year, both to generate revenues from admissions and to attract a broader audience. In FY 1985, the exhibitions presented European, Asian and American materials, while a special group of projects addressed lesser-known paper-related arts, as well as books and libraries as design sources and products. "Objects of Adornment: Five Thousand Years of Jewelry from the Walters Art Gallery, Baltimore" was a wide-ranging survey of great beauty from a collection of major importance. "European Illustration: 1974-1984," organized specifically for the Cooper-Hewitt, looked at modern trends in professional illustration work of several kinds. The figural representation of Europe, together with those of Asia, Africa and North America, formed the theme of an unusual survey of a major iconographic tradition in the decorative arts in "The Four Continents," an exhibition organized by a student in the Museum's Master's Degree Program. The exhibition, "Celebration and Ceremony: Design in the Service of Wine," a panoramic look at objects--both ordinary and extraordinary, secular and sacred--was made possible by a grant from Moet and Chandon Champagne and Hennessy Cognac.

Asian arts were featured in two specialized exhibitions during the year: "Fabled Cloth: Batik from Java's North Coast" and "Chinese Gold and Silver from the Tang Dynasty in American Collections." The cost of the batik project was underwritten with a grant from the Mobil Oil Corporation. American crafts and design traditions were the subjects of "Chicago Furniture: Art Craft and Industry, 1833-1983" and "New Vistas: American Art Pottery, 1880-1920."

During FY 1985, the Museum's own holdings furnished rich materials for a temporary exhibition entitled "Timeless Sources: Rare Books in the Cooper-Hewitt Collection," and "Cut Paper" which presented over 150 examples of this traditional art form from several centuries and cultures.

An impressively international spectrum of design-related exhibitions is scheduled for FY 1986 with "Golden Eye: An International Tribute to the Artisans of India," a festival of India exhibition featuring the effect of traditional Indian crafts upon the

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imagination of several of the world's leading designers. Other important exhibitions for FY 1986 include contemporary Finnish glass, antique toys from the Nuremburg Spielzeug Museum in Germany, Renaissance Hungarian gold and silver, and the iconoclastic 1980s furniture, textiles, and related designs of the international consortium known as "Memphis/Milano." "La Nijinska: A Dancer's Legacy," organized by the Fine Arts Museums of San Francisco as a tribute to the international career of a major creative force in modern dance, will be premiered at the Cooper-Hewitt.

Major private support has been developed by the Museum in the form of a grant from Louis Vuitton, Inc., for the FY 1986 exhibition "Bon Voyage: Design for Travel." Also in FY 1986, the Cooper-Hewitt plans to present the Smithsonian Institution Traveling Exhibition Service show "Hollywood: Legend and Reality." Other shows to be presented in FY 1986 include a survey of "Newcomb Pottery," 19th-century needlework portraits of tall ships, the historical evolution of playing cards, and milestones from the last 50 years of industrial design. The latter project is being funded by a grant from the Consumers Union Foundation.

Two major architectural exhibitions are being developed by the Museum for FY 1987: "Berlin 1900-1933: Architecture and Design," and "Gaudi in Context Building in Barcelona, 1870-1936." In FY 1987, the Museum also anticipates a major exhibition on Louis H. Sullivan, one of America's own titans of modern architecture, as well as subsequent projects on the subjects of printed fabrics from the Museum's collections, the arts and crafts movement in America, and the art nouveau style in Japan.

Collections Management - The size of the collection of the Cooper-Hewitt dictates that collections management be a continuous activity. Cataloguing of the collections is an ongoing process and inventory records are being constantly upgraded and reconciled with preinventory records. In addition, each year a portion of the collection is re-inventoried.

In FY 1985, a grant from the New York State Council on the Arts permitted the Museum to contract an archival consultant who prepared a plan to manage the important papers given to the Cooper-Hewitt by the prominent Czechoslovakian graphic designer, Lladislav Sutnar. The Museum hopes to be able to arrange similar services in future years for several other archival collections which it has acquired over the years, but for which there has not been permanent staff available to act as managers.

The Registrar's Office is a major center of collections management activity. In the first half of FY 1985, the five full-time staff members of the Registrar's Office recorded 673 accessions, oversaw all aspects of formal loan arrangements for 752 items borrowed from 53 separate lenders for nine different exhibitions, and managed the loan of 385 Cooper-Hewitt items to 22 different borrowers in connection with 19 separate projects.

Collections Acquisition - Traditionally, acquisitions have been made by gift or bequest more frequently than by purchase. In FY 1985, some of the most important purchases included a group of nine early 20th-century linen damask napkins made in the Netherlands; a very rare seven-meter length of hand-printed wallpaper made by the Ravaillon firm of Paris in about 1800; two elevations for a house for F. J. Hertzel by the French architect Eugene Viollet-le-Duc, dated 1874; an unusual group of seven graphics documenting design for a printed silk by the renowned artist Raoul Dufy, who was employed by the French manufacturer Bianchini-Ferier between 1912 and 1928; and a spectacular 1907 English silver sideboard plate designed by L. Movio and made by Holland, Aldwinkle and Slater. During FY 1985, a group of 19th-century prints (portraying race horses) which had been left to the Museum by Erskine Hewitt, without restriction upon their use or disposal, was sold at public auction.

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Publications - The Cooper-Hewitt's publications program, which operates strictly with nonappropriated funds, has been active. A thorough catalogue of the American art pottery collection will be completed and published in FY 1986, after more than a year's work. A portion of the sponsor's grant made possible a very handsome book entitled, "Celebration and Ceremony: Designs for Wine," to accompany the exhibition. The publications office also assists in the production of four illustrated newsletters which are sent to the Museum's members each year, as well as four brochures describing the changing subscription programs offered by the Museum.

A collection handbook describing the range of the Museum's rare book holdings was produced with the aid of a generous grant from Mr. Arthur Ross to accompany the "Timeless Sources" exhibition. Work also progressed throughout FY 1985 on two additional handbooks devoted to theater designs and landscape architecture materials.

Other planned publications for FY 1986 and beyond include an innovative document to accompany "The Golden Eye," and a book on designs for travel, both of which will be funded by sponsors' grants. Commercial publishers in Europe are being approached about scholarly studies for the Berlin and Gaudi exhibitions. The Museum is forming plans for the continuation of its copublishing arrangement with the Book-of-the-Month Club, and hopes to be able to produce another volume in its continuing "Immovable Objects" series of special design studies. Substantial encouragement for the Cooper-Hewitt publishing program was received in FY 1985 from the J. M. Kaplan Fund, which funded the establishment of a revolving fund to produce catalogues for major exhibitions when such books would otherwise be beyond the Museum's means; and from the National Endowment for the Arts which accorded the First Annual Presidential Design Award to two Cooper-Hewitt publications: Cities: The Forces That Shaped Them, and American Enterprise: Nineteenth-Century Patent Models. In addition, both publications won several other professional awards.

Education - The Master's Degree Program in the history of the decorative arts is operated, in collaboration with Parsons School of Design/New School for Social Research, entirely with private funds. Graduates from the first class have taken positions with the Philadelphia Museum of Art, the J. Paul Getty Museum, the Baltimore Museum of Art, the London Museum (England), and the St. Louis Museum of Art, among others. The Helena Rubinstein Foundation and the Ford Foundation have provided scholarship funds, and the Museum hopes to see the availability of such support expanded in FY 1986 and FY 1987.

Capital Campaign - To raise a proposed $11.5 million for the design and construction costs for a new wing which will link the Mansion with the adjacent Miller House, a Capital Campaign is being prepared by the professional fundraising firm of Brakeley, John Price Jones. Important progress was made in FY 1985 with the visits of several members of the Smithsonian Board of Regents to New York to study current conditions and the limitations of the physical plant. Subsequently, a unanimous decision was reached by the Board of Regents to seek authorization for a Federal appropriation of $11.5 million as one-half of the total necessary to renovate and construct an adequate museum facility which will incorporate the most important elements of the existing structures. Over $3 million has been raised thus far, and a national committee comprised of friends of the Smithsonian was established to identify potential major donors. Additional committees of professional interest groups and others who support the Museum's activities also are envisioned.

EXPLANATION OF PROGRAM INCREASE - Research ($50,000) - In FY 1987, an increase of $50,000 is requested to reinforce the Cooper-Hewitt's research capabilities. The Cooper-Hewitt Museum represents an important scholarly resource in interdisciplinary research in the field of design, with a research library of more than 35,000 books on decorative arts, architecture, design and related fields as well as extensive graphic and

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archival collections related to interior and industrial design, textiles, color, pattern, and symbols. The Cooper-Hewitt's collections are its principal assets and the primary documents with which it informs and serves the public. The size and great diversity of the Museum's collections create a formidable challenge in providing adequate support to those researchers who use the collections for study. For instance, the collections of the Department of Drawings and Prints and the Department of Decorative Arts (which contain objects ranging from ancient materials to contemporary art and from oriental to American to European origin) are each more numerous than the complete holdings of many museums. The pressures of an active exhibition program, combined with the scope and range of the collections, leave little or no time for ongoing research projects, and maintaining the collections. To assist the two curators of these departments in researching these collections, a sum of $50,000 is requested to secure the contractual services of scholars to develop finding aids and other research documentation for the collections.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These are derived from a variety of sources including museum shop sales, product development, membership and admission fees, donations, fund-raising events, and allotments. The allotments support salaries of the director, administrative office and various other staff members and help defray expenses associated with special events such as exhibition openings. Specific funds are used to support educational programs, museum shop expenses, exhibitions and publications for the Museum. Funds from the Institution's Collections Acquisition, Scholarly Studies and Educational Outreach Program, Research Opportunity Fund and Special Exhibition Fund support research, education and exhibition projects. In FY 1985, total expenses from these programs were $46,000.

Restricted Funds - These funds are provided from grants, bequests, and other donations from individuals, foundations, organizations, or corporations for specific purposes. In FY 1986 and FY 1987, these funds will support exhibitions such as the following which are described in the preceding narrative: "Gaudi in Context" (estimated expenditures of $200,000 in FY 1986 and $243,000 in FY 1987); "Wine" (estimated expenditure of $32,000 in FY 1986); "Death" (estimated expenditures of $57,000 in FY 1986 and $288,000 in FY 1987); "Travel Designs" (estimated expenditure of $160,000 in FY 1986); and "ManTRANSforms II" (estimated expenditures of $150,000 in FY 1986 and $60,000 in FY 1987).

Federal Grants and Contracts - These funds are provided by various government agencies and departments for specific program support. The Museum annually seeks funding in varying amounts from the New York State Council on the Arts for exhibition support and other programs as well. Requests for six separate projects were submitted for possible funding in FY 1986 (estimated expenditures of $50,000 in FY 1986 and in FY 1987).

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NATIONAL MUSEUM OF AFRICAN ART

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS: FEDERAL FUNDS FTE*	FEDERAL FUNDS Amount	UNRESTRICTED FUNDS: General FTP**	General Amount	Special Purpose FTP**	Special Purpose Amount	RESTRICTED FUNDS FTP**	RESTRICTED FUNDS Amount	FEDERAL GRANTS & CONTRACTS FTP**	FEDERAL GRANTS & CONTRACTS Amount
FY 1985 Actual	28	1,188	2	600	-	105	-	58	-	-
FY 1986 -Base	40	2,623	2	55	-	12	-	721	-	-
-PL 99-177***		2,513								
FY 1987 Estimate	55	3,342	1	84	-	8	-	1,188	-	-

* FTE = Full-time equivalent
** FTP = Full-time permanent positions
*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	40	15	55
11 Personnel Compensation	1,012	317	1,329
12 Personnel Benefits	125	39	164
21 Travel	36	12	48
22 Transportation of Things	35	156	191
23 Rent, Communications & Utilities	3	-	3
24 Printing & Reproduction	260	26	286
25 Other Services	400	53	453
26 Supplies & Materials	580	50	630
31 Equipment	56	62	118
Collections Acquisition	116	4	120
Total	2,623	719	3,342

Analysis of Increase

Necessary Pay	20
Inflation	61
Program Funds	638

ABSTRACT - The National Museum of African Art is the only museum in the United States devoted to the collection, preservation and explication (through exhibitions, related educational programs, research and documentation) of the visual arts of Africa. Founded in 1964 as a private institution, the Museum became a bureau of the Smithsonian Institution in August 1979 following the enactment of Public Law 95-414. In mid-1986, the Museum will move from its Capitol Hill location to The Mall as a part of the Quadrangle complex, with its public opening scheduled for mid-1987. For FY 1987, an increase of 9 workyears and $502,000 is requested to provide necessary support for the Museum's expanded programs in its new location in the Quadrangle. A further amount of 6 workyears and $136,000 is required to annualize the partial year funding for 14 positions

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approved in the FY 1986 budget for Quadrangle-related support. Necessary pay of $20,000 is required for existing staff and an amount of $61,000 is requested to compensate for the effects of inflation in nonsalary areas of expense.

PROGRAM - The National Museum of African Art (NMAfA) has a unique role in the United States museum community. As the only museum devoted solely to the collection, study and exhibition of African art, NMAfA endeavors to promote through the visual arts an interest in an understanding of the diverse cultures in Africa south of the Sahara. Although the Museum's primary emphasis is on the traditional cultures of the sub-Saharan region, it also studies, and occasionally exhibits, the ancient and contemporary arts of the entire continent. The Museum develops and implements a variety of interpretive programs: exhibitions, lectures, tours, classes, workshops, audio-visual presentations, and publications. Each program endeavor is motivated by the esthetics of traditional African art, and the Museum actively cooperates and coordinates its activities with those organizations and institutions whose purposes are complementary.

In the spring of 1986, the Museum is scheduled to move to its new location as a part of the Center for African, Near Eastern, and Asian Cultures. During the ensuing months, the Museum's plans and efforts will be directed intensively toward preparations for the scheduled 1987 public opening at which time all museum programs must be fully operational. The funding provided in FY 1985 and FY 1986 and requested for FY 1987 will enable the Museum to strengthen its staff and develop and produce programs in research, exhibitions, collections, and public education and orientation of the highest quality.

Research - During FY 1985, NMAfA completed its initial phase of the Union Catalogue of all African art objects in the collections of the Smithsonian, a project begun in FY 1984 and coordinated for the entire Institution by the National Museum of Natural History/Museum of Man. Computer entries have now been made in a standard format for approximately 6,000 objects in the collection of NMAfA and photographs have been taken of most of the Museum's primary holdings. Ongoing review and revision of these entries will reflect the most current field data and reference literature and assure accurate regional and ethnic style attribution, and when possible, chronological classifications. This information will be merged with similar data on all other African art objects in the Smithsonian collections, enabling collection information to be compiled and presented in a systematic format. The absence of a standard specialized terminology in African art studies has been one of the most difficult aspects of research. The Union Catalogue addresses this need for standardization by utilizing terminology that is suited uniquely to the special requirements of African art research.

A major research component of NMAfA is the Eliot Elisofon Photographic Archive, one of the largest archives in existence on African art, culture and environment. Donations in FY 1985 of nearly 2,000 color slides and 3,500 black and white photographs have increased its holdings to about 35,000 color slides and 38,500 photographs as well as 75,000 feet of unedited film footage and 50 feature films. Among the gifts received in 1985 was a group of over 2,400 field photographs of Nigeria and Zaire, taken between 1949 and 1959, including photographs of the first excavations at Ife and material for a Yoruba art survey. Also received in 1985 was a collection of over 400 vintage field photographs of Zaire, Sudan, the East African Coast, including Zimbabwe, taken in 1932. The staff of the Archive responded to well over 1,000 telephone and written requests for visual information and supplied duplicate slides and photographs to students, scholars, universities, museums and other organizations. Within the Museum, the curatorial and education staff depend upon the Archive for research, exhibition and teaching purposes.

An important aspect of the photo archive is the conservation and preservation of the slides, negatives, prints and film which comprise its holdings. In FY 1985, as part of

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this ongoing program, the duplication of 1,400 glass negatives and lantern slides, in order to protect originals from further handling, was begun and the transfer of black and white negatives to archival quality storage sleeves was continued.

The increased funding provided in FY 1986 will enable the Museum to add to the permanent staff a senior curator. NMAfA curators have regional specialization as a result of their graduate training. This assures that expert research work is carried out through the curatorial department on the permanent collection and for exhibitions. The addition of a senior curator assures that research meets the highest professional standards and the administration for that department is well coordinated. The FY 1986 requested increase will also permit the addition to the staff of a secretary to handle correspondence and filing for the entire curatorial department.

Exhibitions - During FY 1985, the Museum presented three major traveling exhibitions, beginning with "Praise Poems: The Katherine White Collection," one of the foremost American private collections of African art, now a part of the Seattle Art Museum, the organizer of the exhibition. This was followed by "African Masterpieces from the Musée de l'Homme," an exhibition organized by The Center for African Art, New York. Consisting of 100 celebrated works collected by early French explorers during anthropological expeditions, or received as gifts, the works are a part of the Musée de l'Homme collection. This outstanding exhibition brought record numbers of visitors to the Museum during its two-month stay. In July 1985, the Museum opened "Igbo Arts: Community and Cosmos," organized by the UCLA Museum of Cultural History, consisting of more than 100 examples of Igbo art from museum and private collections in the United States, Canada, Europe and Nigeria. This first comprehensive survey of Igbo art illustrated the richness and complexity of the diversity of art styles among 10 million people living in southeastern Nigeria. The Museum also continued its popular series of small rotating exhibitions focusing on individual objects in the Museum's collection.

While still operating at its location on Capitol Hill during the first part of 1986, the Museum's exhibition schedule will include: (1) "History, Content and Materials: Objects from the Permanent Collection"; (2) a collection of photographs which were donated to the Museum's photo archive by Constance Stuart Larrabee; (3) "The Rising of a New Moon: A Century of Tabwa Art," a major international loan exhibition of approximately 100 Tabwa objects from European and American public and private collections, organized by the University of Michigan Museum of Art, that premiered at the National Museum of African Art. The final exhibition at the Museum's Capitol Hill location will be "A Human Ideal in African Art: Bamana Figurative Sculpture," an exhibition of approximately 40 sculptures from the Bamana people of Mali, borrowed from museums and private collections in the United States. After the Washington, D. C. presentation, this exhibition will travel to the Metropolitan Museum of Art in New York.

Planning and preparation for the exhibitions, which will open in the Quadrangle in the spring of 1987, are well under way. The major loan exhibition, "African Art and the Cycle of Life," will include objects of the highest esthetic quality, borrowed from public and private collections in Europe, the United States and Africa. Two of the three major opening exhibitions, "African Textiles from the Permanent Collection" and "African Art from the Permanent Collection," will include recent acquisitions, the majority of which have never been exhibited. All exhibitions will include photographic material illustrating aspects of African art, culture and environment.

The funding provided in FY 1986 will permit the Museum to support an expanded exhibition program in the new location, with exhibition space more than four times larger than the Museum's present facility. With the addition of an exhibit production assistant, shop foreman and carpenter, on-site construction of some of the exhibition components can begin immediately following the move to the Quadrangle in the spring of 1986. A graphic designer and a writer/editor who will join the staff in FY 1986 will

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assist with the design and production of printed materials such as catalogues, informational brochures, gallery guides, text and photo panels, all of which are planned to accompany the exhibitions. Audio-visual equipment will be installed and program material will be developed to further enhance the visitors' perception of African art in its cultural context.

Since a varied and substantive exhibition program is one of the most effective methods the Museum has to assure public understanding of African art and culture and also to generate new research in the field, the planning and development of future exhibitions is a continuous process. Thus, even before the opening of the inaugural exhibitions in the Quadrangle, planning is under way on those that will follow. As now planned, these future exhibitions will include "Swahili Arts of the East African Coast"; "Bamana Puppets, Masks and Irons"; "African Skeuomorphs"; and "African Master Carvers."

Collections Management - An increase in base funding in FY 1986 will permit the addition to the staff of a photographer to provide an ongoing visual record of collection material (essential to collections management), publications, public information and the Museum's education and outreach programs. The increase will also provide for two temporary museum technicians to assist the Museum's permanent staff in packing and inventorying the entire collection prior to and following the move to the Quadrangle.

Education and Public Orientation - The Museum's programs for education and public orientation are as diverse as the vast audience they serve. Tours for nearly 300 elementary and secondary school groups were scheduled during FY 1985; an equal number of requests could not be accommodated due to space and staff limitations. More than 100 art workshops were presented in FY 1985, including those for children, adults and family groups.

In addition to scheduled tours and art workshops, the Museum also offers outreach programs to schools, senior citizens, and other audiences for whom the Museum is not readily accessible. In FY 1985, outreach programs reached more than 1,500 persons at 100 sites in the Washington metropolitan area. These included special programs presented at St. Elizabeth's and D. C. Children's hospitals, and a pilot African art program at a local elementary school. In conjunction with the Museum collections, research program and exhibitions, a substantive program of lectures, films, and demonstrations was scheduled throughout FY 1985 to enhance visitor appreciation and understanding of African art and culture. For example, a special film series which featured the works of a renowned British filmmaker, Francis Speed, explored the history of ethnographic filmmaking in Africa. For teachers, the Museum created special written material for each exhibition, and offered training workshops to demonstrate how the Museum can serve as a teaching resource within the curriculum.

With a private grant obtained in FY 1985, the Museum produced the first of a series of publications on African art and culture for elementary and secondary schools. This first publication concerned the art and history of ancient African kingdoms. Future publications will focus on artistic techniques such as textiles, ceramics, or the arts of individual regions or ethnic groups.

Collections Acquisition - The Museum's permanent collection of 6,000 objects is its primary resource for research, exhibition, publication and education programs. While the present collection is broad in its sub-Saharan representation, the Museum has worked steadily to strengthen its holdings from the regions of the western part of the Sudan, the Guinea Coast, and central Africa. In order to assure the highest quality and regional scope of the collection, an active acquisition program is essential. The increase of funds received in FY 1986 will enable the Museum to fill systematically some of the most serious gaps in the collection with objects of the finest esthetic merit.

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In FY 1985 and through the first quarter of FY 1986, the Museum acquired 107 works of art of which 53 were donated by private collectors. Of the total acquisitions, six were purchased with privately donated funds and six with appropriated funds. Among those acquired with appropriated funds were Ghana, Akan funerary commemorative head; Zaire, Eastern Kuba raffia applique textile; Nigeria, Annang Ibibio shrine cloth; Ghana, Akan man's robe and a Zaire, Tio clay vessel. An extraordinary private collection of 12 objects from various sub-Saharan regions was donated in order to enrich the Museum's permanent holdings in preparation for its opening on The Mall. Of special note in this gift is a Cameroon, Bamum memorial grave figure. It is unique in the corpus of African sculpture and is dated 1908. In addition, in FY 1985 and FY 1986, after having secured Trust funds, the Museum was able to exercise the first two purchase options to acquire 42 works of art from a private European collection.

EXPLANATION OF PROGRAM INCREASE - Quadrangle-related Programs (15 workyears and $638,000) - For FY 1987, an increase of 9 workyears and $502,000 is requested to provide necessary support for the Museum's expanded programs in its new location in the Quadrangle, including exhibitions (6 workyears and $340,000); automation (.25 workyear and $75,000); research (1 workyear and $25,000); and education and public orientation (1.75 workyears and $62,000). A further amount of 6 workyears and $136,000 is required to annualize the partial year funding for 14 positions approved in the FY 1986 budget for Quadrangle-related support.

-- Exhibitions (6 workyears and $340,000: - Funding totaling $1,000,000 was provided in FY 1986 for costs associated with the design and production of exhibitions in the Quadrangle facility. An increase of 6 workyears and $340,000 is requested in FY 1987 to complete the staffing as planned: to provide the balance of the funding required to produce and install the inaugural exhibitions; and to provide a permanent base for the Museum's future exhibition program. This would allow for the addition to the staff of an assistant in the exhibition design office; a graphic production assistant, who will assist in the production of silkscreened materials; a carpenter and a painter, who will work with the exhibition production unit; and an art handler and a packer, who will assist in exhibition installation as well as the packing/unpacking of loan material (6 workyears and $129,000). A sum of $211,000 also is requested for exhibition support costs including packing and shipping ($150,000); contractual services and insurance ($25,000); supplies and materials for fabrication and installation ($26,000); and travel ($10,000). This funding will be retained in FY 1988 and following years to provide the necessary level of base exhibition support required for the expanded exhibition facilities in the Quadrangle.

-- Automation (.25 workyear and $75,000): A basic automation program has been developed that would permit registration and curatorial staff to participate in the central collection information system; to permit administrative staff to perform functions efficiently such as on budget control, filing and personnel record keeping; and to equip clerical, public information, education and editorial staff with word processors. Base funding of $25,000 in FY 1986 allowed the first purchase of automation equipment specified in the basic automation plan (four work stations, printers and software) and necessary training for two staff members. The requested increase for FY 1987 will allow the purchase of additional automation equipment and staff training, as well as software and cost sharing of the central computer system ($48,000). In FY 1988 and following years, total base funding of $93,000 will be retained to cover the cost of annual maintenance, additional software, cost-sharing of the central computer system and cyclical replacement of the equipment.

It is anticipated that by the last quarter of FY 1987, sufficient automation equipment will have been procured to require the addition of a computer assistant to assure the most effective use of the equipment and to coordinate data applications (.25 workyear and $7,000). (Funding for the full-year cost of this position is anticipated in the FY 1988 budget request.)

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— Research (1 workyear and $25,000): With the funding provided in FY 1986, the Museum added a senior curator to supervise and coordinate all curatorial functions. The requested increase in FY 1987 will permit the addition of an assistant curator for Central African art (1 workyear and $25,000), thereby providing curatorial specialization for the major sub-Saharan geographic/culture regions — West, Central and Southern/Eastern — that are represented in the collection. With the addition of this assistant curator, research can begin on several major exhibitions: Fang (Gabon) masks and reliquary figures, the art of the Luba (Zaire), and a major exhibition on the art of the Kwango Basin (Zaire).

— Education and Public Orientation (1.75 workyears and $62,000): With the increased number of visitors anticipated in its new location on The Mall, the National Museum of African Art has begun to strengthen its staff and program support to enable it to develop and conduct public programs for a substantially larger audience. With funds provided in FY 1986, the Museum will add two positions in the education department: an education specialist to conceive and develop special education programs for the general public, and a docent/intern coordinator. FY 1986 funds also provided for the development and production of of a new educational outreach program and related printed materials as well as a variety of public information materials such as information flyers, a general museum brochure and public service announcements for both radio and television.

The requested increase of 1.75 workyears and $62,000 for FY 1987 will allow the addition of an education specialist whose primary responsibility will be elementary/secondary level programming and outreach programs and a secretary to assist the Public Affairs Office with the increased volume of activity that will result from the expansion of the Museum's programs and audience (1.75 workyears and $39,000). (Funding for the full-year costs of these positions is anticipated in the FY 1988 budget request.) The requested increase will also provide for the production of printed materials related to a series program of combined school and in-house sessions designed to prepare elementary school students for an in-depth exposure to African art and culture at the Museum, as well as the printing and production of a calendar of events ($23,000).

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These are derived from the Museum's share of sales in the museum shop, membership contributions, courses conducted in cooperation with Washington metropolitan area public education institutions and allotments. They are used to provide additional support for the Museum's education and collections acquisition programs, exhibition openings and to defray travel costs associated with meetings of the Museum's Commission. Allotments were provided in FY 1985 and in FY 1986 for the mortgage payments at the present location on Capitol Hill and to support insurance premiums plus the salary costs of two employees. Funds from the Institution's Collections Acquisition, Scholarly Studies and Educational Outreach Program and the Smithson Society were used for the acquisition of an extraordinary mid-19th century ivory figure from the Yoruba people of Nigeria. Expenditures under these programs have not been recorded for FY 1986 and FY 1987 which explains the variance in totals shown between FY 1985 and the subsequent two years.

Restricted Funds - Funds provided here are in the form of grants and gifts from individuals, foundations, organizations or corporations for specific purposes. Generally, they provide support for a particular project or exhibition. For example, in FY 1985, a grant received from the Women's Committee of the Smithsonian National Associates Program enabled the Museum to purchase materials used in two educational outreach programs, "Animal Symbolism" and "African Music." A grant from the Friends of the National Museum of African Art provided funds for the purchase of a future acquisition. These funds and those from various individuals and other organizations provided supplemental support for the acquisitions program. A grant from the Shell Companies

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Foundation provided funds to begin a publication series for the Museum's Education Department (estimated expenditures of $10,000 in FY 1986). To supplement appropriated funds for planning and preparation of one of the major inaugural exhibitions, "African Art and the Cycle of Life," a three-year grant from the Cafritz Foundation was awarded in 1985 (estimated expenditures of $166,000 in FY 1986 and $78,000 in FY 1987). The Museum is working to secure funds from private sources to strengthen its permanent collection. In this connection, the Museum has been able to acquire a portion of an extraordinary collection of 62 objects of African art assembled over the years by an European collector. The collection, two-thirds of which is in hand, ranges from the 12th to 15th century A.D. to the mid-20th century (estimated expenditure of $500,000 in FY 1986). An intensive development effort continues to assure the acquisition of the balance (estimated expenditure of $500,000 in FY 1987). Additional gifts and grants are anticipated to support a special publication program, the first volume of which is titled African Art in American Collections (estimated expenditures of $19,000 in FY 1986 and $29,000 in FY 1987).

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ANACOSTIA NEIGHBORHOOD MUSEUM

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
			General		Special Purpose					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1985 Actual	17	817	1	38	-	-	-	1	-	-
FY 1986 -Base	19	888	1	41	-	1	-	1	-	-
-PL 99-177***		852								
FY 1987 Estimate	19	910	1	41	-	1	-	1	-	-

* FTE = Full-time equivalent

** FTP = Full-time permanent positions

*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	19	-	19
11 Personnel Compensation	517	9	526
12 Personnel Benefits	65	1	66
21 Travel	5	-	5
22 Transportation of Things	4	-	4
23 Rent, Communications & Utilities	45	2	47
24 Printing & Reproduction	35	1	36
25 Other Services	76	3	79
26 Supplies & Materials	121	5	126
31 Equipment	20	1	21
Total	888	22	910

Analysis of Increase

Necessary Pay	10
Inflation	12

ABSTRACT - Founded in 1967, the Anacostia Neighborhood Museum serves as a national resource for exhibitions, scholarly and applied research, historical documentation, and interpretive and educational programs relating to black history and culture in America. Located in the Anacostia neighborhood in the southeast section of Washington, D.C. (approximately six miles from The Mall), the Museum currently occupies public and exhibition space in the old Carver Theater (2405 Martin Luther King, Jr. Avenue) and an Exhibits Laboratory Building at Fort Stanton Park. No program increase is requested for FY 1987. Necessary pay of $ 10,000 is required for existing staff and an amount of $12,000 is sought to compensate for the effects of inflation in nonsalary areas of expense.

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PROGRAM - The Anacostia Neighborhood Museum is a national prototype for scholarly and applied research, historical documentation, exhibition, and interpretive and educational programs relating to the experience of black Americans and their contributions to science, history and the arts. The Museum serves as a source of materials on black American history for similar institutions around the Nation and demonstrates to other museums and neighborhoods new and innovative ways of inviting nontraditional museum audiences into the worlds of science, history, and the arts. Moreover, the Museum serves as a cultural resource for the people of Anacostia.

Presenting American history from a black perspective through its research, exhibitions and educational activities, the Anacostia Neighborhood Museum also cooperates with other Smithsonian units to strengthen their own capabilities in research and exhibitions on subjects related to black history and culture. The Museum is an active member of the African American Museums Association and works with other museums and research institutions, universities, and archives throughout the United States to enhance the awareness and appreciation of the contributions of black history and culture to American society.

Research - During FY 1985 and FY 1986, the scripting, artifact search and installation were completed for "The Renaissance: Black Arts of the Twenties," an exhibition that evidences a creative way of addressing the problems of American race relations and that evokes a new spirit and sense of racial pride among Afro-American artists. Exhibited during FY 1985, "Black Women: Achievements Against the Odds" was prepared for travel by the Smithsonian Institution Traveling Exhibition Service (SITES) and will be seen by national audiences.

In FY 1986, the implementation of the Checklist of Afro-American Artifacts at the National Museum of American History began and staffing for this joint Anacostia Neighborhood Museum-Museum of American History project was completed. When finished, the checklist will be an invaluable research tool that will enhance the research program at the Anacostia Neighborhood Museum as well as to other scholars and interested public.

A research project begun late in FY 1985, "Black Inventors," will be a major forthcoming exhibition at the Museum. The research is focused on the impact of the contributions of black inventors to the growth and development of the industrialization of America. To support this activity, staff have contacted repositories, private collectors and corporations. In addition, a working bibliography and research prospectus have been prepared. In FY 1986, onsite inspections will be made of collections, working papers, patent drawings, photographs, and memorabilia at nine major repositories.

Research to support the exhibition "P. H. Polk: The Man and His Work" is continuing. In addition to the excellent photographs by Polk that document Southern rural folkways and lifestyles, more information has been obtained from Polk's family history that reveals much about the sensitive and creative man behind the camera's lens. Pictorial information will be supplemented with audio and audio-visual materials from sources such as the Alabama State Oral History Project and the "P.M. Magazine" segment "I Shuttered History."

Basic research has been completed in preparation for the major forthcoming exhibition, "Climbing Jacob's Ladder: One Hundred Fifty Years of Black Church History, 1750-1900" (scheduled for late FY 1987). During FY 1986, the exhibition script will be written and forwarded to the designer and outside readers while the researchers continue the process of loan negotiations begun during FY 1985.

Traveling Exhibitions - In cooperation with the Smithsonian Institution Traveling Exhibition Service, the Anacostia Neighborhood Museum has produced several traveling exhibitions related to the history, culture, and achievements of black Americans,

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including "Out of Africa," "Blacks in the Westward Movement," "Black Women: Achievements Against the Odds," and "The Frederick Douglass Years." As part of the commemoration of the Franklin Delano Roosevelt Centennial in 1982, the Museum presented "Mary McLeod Bethune and Roosevelt's 'Black Cabinet'," which became a traveling exhibition after its showing at the Museum. These traveling exhibitions allow the Museum to reach diverse national audiences in addition to those who are able to visit the Washington-based facility. For instance, more than 5,500 students and visitors to the Mary McLeod Bethune Home/Archives and gravesite at Bethune-Cookman College in Daytona Beach, Florida, saw "Mary McLeod Bethune and Roosevelt's 'Black Cabinet'" during the past year as part of the commemoration of the 110th anniversary of her birth. During FY 1985, "Out of Africa" was exhibited at the Boston Afro-American National Historical Site, and "Black Wings: The American Black in Aviation" was exhibited by Broward Community College in Fort Lauderdale, Florida, and by the Federal Aviation Administration in East Point, Georgia.

Exhibitions at the Museum - During FY 1984, Anacostia produced and exhibited a third copy of the National Air and Space Museum exhibition, "Black Wings: The American Black in Aviation," which is presently being toured by SITES. During FY 1985, "Black Women: Achievements Against the Odds" (shown from October 1984 to June 1985), and "The Renaissance: Black Arts of the Twenties" (opened in September 1985 and scheduled to run through December 1986) were presented. "Black Women" presents the adversities, contributions, and varied roles of a representative group of 113 American black women, from the noted slave-poetess Phillis Wheatley (born in 1753) to the distinguished former Congresswoman Barbara Jordan. Designed as a panel show, "Black Women" provides biographical and historical data, characteristic quotations, and little-known vintage photographs of the women highlighted. "The Renaissance: Black Arts of the Twenties" documents and highlights the achievements of the black literary community during the 1920s, including the influences of the leading protagonists and supporters of the "New Negro Movement" and its subsequent impact on the arts. This exhibition, greatly enhanced by material loaned by major archival repositories, the Library of Congress, and private collectors and patrons of the arts, also will feature audio-visual presentations. In FY 1987, two art shows will be presented--one will be the art works of the D.C. Art Association and the second will feature the works of Sam Gilliam and two other local artists.

Exhibition plans for FY 1987 and beyond will continue to emphasize both black history and the role of blacks in American art and culture. "Climbing Jacob's Ladder: One Hundred Fifty Years of Black Church History, 1750-1900" will show the historic black church as truly "a rock in a weary land" and "a shelter in a time of storm." Although the church was first and foremost an agency for lifting the spirit, its concern always extended beyond spiritual needs to include the total aspirations of the community. "Black Inventors" will explore Afro-American contributions to science, creative genius and technology. "P. H. Polk: A Man and His Work" will feature photographs taken by Prentice H. Polk (1898-1985), highlighting southern folklife.

Public Education and Orientation - During FY 1985, Anacostia Neighborhood Museum staff, with the assistance of volunteers, conducted tours for elementary and secondary school groups, gave lectures to museum audiences and academic and professional groups, and developed special presentations and interpretive programs to amplify and support exhibitions. A new program developed in FY 1984, "The Lunch Box Forum," has brought together community residents, colleagues from other Smithsonian museums and other interested individuals in an informal discussion series covering topics of interest to the black community. Participants in the "Forum" have included Dr. Spencer Crew, historian, National Museum of American History on "Afro-American Migration: 1915-1940"; Dr. Gary Puckrein, editor, Visions magazine on "Coming in 1985: A National Magazine of Afro-American Culture"; Mrs. Sylvia Williams, director, National Museum of African Art on "Future Plans for the National Museum of African Art"; Colonel C. D. "Lucky" Lester, USAF

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(Ret.) on his experiences as an original member of the Tuskegee-trained 99th Fighter Squadron; Mr. Stanley Anderson, former D.C. councilman, on "Underpinnings of a Neighborhood Museum"; Dr. Audrey Chapman, Howard University, on "Dynamics Women Face in the 1980s: The Black Superwoman, Male/Female Relationships, and the Single Woman"; and Mr. John Kinard, director, Anacostia Neighborhood Museum, on "Perspectives on Africa."

In a workshop, "Using Personal Histories to Motivate Learning," which was sponsored by the Museum, the D.C. Council on the Social Studies, and the D.C. Public Schools Instructional Services Center, teachers viewed the "Black Women" exhibition and heard a colleague of the late civil rights activist, Fannie Lou Hamer, discuss the impact of the Civil Rights Movement on the speaker's life as a youngster growing up in Mississippi. The workshop participants also shared personal histories and ideas for classroom use and sang songs from Movement days. The Museum also sponsored teacher workshops/meetings on "Paper as Art" where participants learned how to make paper and then use it to create a work of art. Other educational programs included a lecture series on black women in politics, science, engineering, the arts, and broadcasting; presentations by master storytellers; and an awards ceremony given in recognition of the services provided by the more than 40 volunteers working at the Museum.

The Museum will continue to strengthen its community relations with schools, senior centers, group homes, and other sites in the Washington metropolitan area, with special emphasis on Anacostia, and will continue to develop assessment programs to measure its effectiveness and to enable the Museum to continue to improve the quality of its services.

Museum Facilities - With funding provided in the Institution's Restoration and Renovation of Buildings appropriation in FY 1984 and FY 1985, construction of the addition to the Museum's Fort Stanton facilities began in FY 1985. The new addition will provide safe and environmentally controlled exhibition areas adjacent to the Museum's Exhibits Laboratory and will include an exhibits staging area that will minimize the period that the Museum must be closed during the dismantling or installation of an exhibition. It is anticipated that construction will be completed in the spring of 1986. The Museum's public exhibition and education facilities then will be relocated to the Fort Stanton building and the lease of the old Carver Theatre will be terminated. It is anticipated that the savings realized by terminating the leases of the Carver Theatre and its adjacent lot will be applied initially to equipping and furnishing the new facility, and in subsequent years to enhancing research and exhibition production capability.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - Funds are provided by an annual allotment to cover the salary costs of a woodcrafter. During FY 1986, this woodcrafter will work on panels for hanging art work and build exhibit cases, stands, and frames for the two art exhibitions which will be presented in the new facility. Additional monies, derived from exhibition rentals and donations, are used to purchase supplies and materials to support the Museum's programs.

Restricted Funds - These are in the form of gifts from individuals and organizations and are designated for the support of specific Museum programs.

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ASSISTANT SECRETARY FOR PUBLIC SERVICE

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS: FEDERAL FUNDS FTE*	FEDERAL FUNDS Amount	UNRESTRICTED FUNDS: General FTP**	General Amount	Special Purpose FTP**	Special Purpose Amount	RESTRICTED FUNDS FTP**	RESTRICTED FUNDS Amount	FEDERAL GRANTS & CONTRACTS FTP**	FEDERAL GRANTS & CONTRACTS Amount
FY 1985 Actual	25	1,170	34	1,611	1	463	-	80	-	-
FY 1986 -Base	23	1,204	38	1,772	-	139	-	-	-	-
-PL 99-177***		1,190								
FY 1987 Estimate	23	1,257	39	1,887	-	117	-	-	-	-

* FTE = Full-time equivalent
** FTP = Full time permanent positions
*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	23	-	23
11 Personnel Compensation	836	8	844
12 Personnel Benefits	107	3	110
21 Travel	13	-	13
23 Rent, Communications & Utilities	36	2	38
24 Printing & Reproduction	35	22	57
25 Other Services	117	13	130
26 Supplies & Materials	39	4	43
31 Equipment	21	1	22
Total	1,204	53	1,257

Analysis of Increase

Necessary Pay	11
Inflation	11
Program Funds	31

ABSTRACT - The Office of the Assistant Secretary for Public Service encourages and supports the development of programs to advance the Institution's objectives in education, publication, information, folklife programs and the development of wider audiences. This Office advises the Secretary on general policy issues and program planning for Public Service activities. Included in this line item are the Office of Telecommunications, the Visitor Information and Associates' Reception Center, and the Office of Public Affairs. For FY 1987, increases of $31,000 are requested to conduct an information campaign for the opening of the Quadrangle. Necessary pay of $11,000 is required for existing staff and an amount of $11,000 is sought to compensate for the effects of inflation in nonsalary areas of expense.

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PROGRAM - I. Immediate Office, Assistant Secretary for Public Service: With base resources of 4 workyears and $223,000, the Office of the Assistant Secretary for Public Service provides coordination and supervision of the Institution's educational and public service programs and advises the Secretary on the development of policies and activities for these programs. The bureaus and offices reporting to the Assistant Secretary include: the Office of Telecommunications; the Visitor Information and Associates' Reception Center; the Office of Public Affairs; the Smithsonian Institution Press; Smithsonian magazine; the Office of Folklife Programs; the Office of Smithsonian Symposia and Seminars; and the Office of Elementary and Secondary Education.

II. Office of Telecommunications: With base resources of 3 workyears and $219,000, the Office of Telecommunications, develops and produces radio, film and television programs on the Smithsonian's myriad activities. Working in close collaboration with the Institution's art historians, scientists, and history scholars, the Office supports educational, research and exhibition programs within the museums and informs the public of Smithsonian research and exhibition programs. The productions created by this Office maintain Institutional standards of historical accuracy and academic excellence. Broadcast in virtually every state over public television and radio, as well as over commercial stations and cable systems, these wide-ranging programs also are available to educational institutions and libraries. The effect of these programs is seen not only in the enthusiastic response from audiences, but in the recognition and prestigious awards received from the broadcast and film industries.

The Office produces three major program series. "Here at the Smithsonian," an award winning series of short video features for news and magazine programs, is now in its fifth season on the air. Carried by over 60 commercial and public television stations, the series has tripled its subscription rate since it began in 1982. "Radio Smithsonian," a weekly 30-minute series is now heard on 84 stations here and abroad. "Smithsonian Galaxy," a series of short radio featurettes, continues to be popular with commercial radio stations. This series enjoys a subscription of 230 stations in the United States and around the world. In FY 1987, the Office plans to continue to produce six features per month.

In FY 1985, the film "The Sea: A Quest for Our Future" was aired nationally by the Public Broadcasting System (PBS). The film is based on research conducted by the Marine Systems Laboratory. A half-hour version of this film has been completed and will be made available to schools and science organizations across the country. "The Work of Peace," the award-winning half-hour film relating the story of the signing of the Treaty of Paris of 1783, was telecast on PBS in June 1985. The Office is now distributing this half-hour film to the educational market nationwide. The Office also produced a half-hour film entitled "In Open Air: A Portrait of American Impressionists" which aired on PBS in July 1985. Produced to accompany a Smithsonian Institution Traveling Exhibition Service exhibition, "In Open Air" explored the lives and careers of late 19th-century artists who revitalized the American painting tradition using the impressionist style. In FY 1985, the Smithsonian's "Festival of India" activities were filmed by the Office of Telecommunications in conjunction with the bureaus involved in the Festival.

Projects currently under development or planned by the Office of Telecommunications include a children's television series entitled "Smithsonian Quest." The pilot for this series is now being completed and it will be used to secure funding for a 26-week PBS children's television series which will draw upon the resources of several Smithsonian bureaus. Work continues on a half-hour updated version of the film "American Picture Palaces," which is being produced for broadcast by PBS. Future plans of the Office include planning and research for a possible series of television programs featuring dialogues between young citizens coming of age and various authorities on aspects of citizenship. This project is intended to coincide with the Bicentennial of the Constitution in 1987, and will supplement the symposium, "Our Constitutional Roots," set

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to take place in May 1987. The Office is engaged in the pre-production of a half-hour film on the U. S. Exploring (Wilkes) Expedition of 1838-1842. Working with the National Museum of Natural History's Office of Education, this film is being produced in conjunction with the major exhibition on this subject now being held at the National Museum of Natural History. The film will be circulated throughout the junior high and senior high schools of Washington, D. C. and the Nation. The Office is also involved in a video project, the "Engines of Change" which will complement a major exhibition of the same name to be held at the National Museum of American History in the fall of 1986. The program will portray, in capsule form, the evolution of American technology from the beginning of the Industrial Revolution through the mid-19th century, and set forth the important technological issues facing the United States today.

III. Visitor Information and Associates' Reception Center - With base resources of 2 workyears and $163,000, the Visitor Information and Associates' Reception Center (VIARC) provides information on Smithsonian exhibitions, events, programs and activities to the public. VIARC administers a range of centralized information and assistance programs serving the public, Associate members, staff, volunteers and interns.

Seven-day-services furnished by VIARC include the staffing of information desks in ten museums by a corps of 400 volunteers and the operation of the primary telephone information service for the public, which also provides 24-hour recorded information on Dial-A-Museum and Dial-A-Phenomenon. VIARC also serves as the primary research, response and referral point for public mail; operates an outreach program to promote pre-visit education; presents a variety of daily slide/lecture orientation programs for visitors; and conducts behind-the-scenes tours of the Castle Building. During the summer months of peak visitation, VIARC's mobile information units on The Mall supplement information services in the museums. In addition, VIARC is responsible for a registration and placement program for the approximately 900 volunteers who assist behind the scenes. To gather the statistical data necessary for annual acknowledgement of volunteer support, VIARC conducts an annual volunteer survey. A similar registration and placement program for interns was initiated in FY 1984. In FY 1985, 440 interns were registered, which exceeded FY 1984 figures by 24 percent.

To strengthen the Institution's ability to inform, orient and serve its millions of visitors, VIARC has developed a multifaceted program to upgrade the visitor services provided by the Institution. Important facets of this project are the development of a better system of identification for Smithsonian facilities; improved pedestrian and vehicular directional signage; general information directories; and the establishment of an Information Center in the Castle Building which will provide a primary central point of information and orientation for visitors.

IV. Office of Public Affairs: With base resources of 12 workyears and $599,000, the Office of Public Affairs (OPA) is responsible for acquainting the public with the programs and policies of the Smithsonian. This is accomplished by means of news releases, the Smithsonian News Service, feature articles, Research Reports, calendars, radio-television public service announcements, guides, brochures, contacts with individual journalists, and news conferences. OPA provides advice to individual bureaus and offices on public information policies and problems; monitors the units' public information materials, activities and public affairs aspects of their relations with corporate or other sponsors; and reviews the advertising and promotional plans and materials of corporate sponsors. OPA also produces a monthly staff newspaper and informs management of public and media attitudes and needs. The OPA director serves as the principal institutional spokesperson.

The Office's programs serve both the public and the members of the Smithsonian community. Externally oriented programs are generally designed to acquaint the public, via the media, with programs (exhibitions, research, public events and other activities) and

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policies in order to encourage public participation in, knowledge of, and support of programs and policies. News releases originating in the various bureaus and in the Office of Public Affairs are used to encourage the media to report on the research, exhibitions and other activities of the Institution.

The Smithsonian News Service provides 1,557 newspapers, including some of the most prestigious in the Nation, with a monthly package of four feature-style articles on subjects in art, history and science, technology and contemporary life. These News Service packages are also distributed to a number of museum and general interest magazines as well as to various publications overseas. In addition, selected articles are distributed by the United States Information Agency to its offices abroad.

OPA publishes a monthly calendar of events in The Washington Post to inform readers of events, lectures, motion pictures and Resident Associate performances, exhibitions, and openings. Also, a Quarterly Calendar of Exhibits containing brief descriptions of all exhibitions having firm opening dates is distributed to news organizations nationally. OPA publishes "The Smithsonian Institution: Yesterday and Today," a 100-page publication designed for journalists and others in need of detailed background information on the Institution, its components, holdings and research. OPA plans a major revision of this publication to include changes of emphasis within the Institution and the opening of the Sackler Gallery, International Center, National Museum of African Art and the Haupt Garden.

The Office of Public Affairs produces Research Reports, a periodical published three times a year. The publication is devoted to reports on research in the arts, history and sciences. Research Reports reaches more than 34,000 readers including the scholarly community, foundations, universities and contributing members. A brochure entitled "Science at the Smithsonian" has recently been prepared to acquaint a broad audience with the range and philosophy of scientific research. This brochure has been distributed to members of Congress, visiting scientists, members of the media and others, and also is being used for development purposes by the Office of Membership and Development. The success of this publication has led OPA to consider the feasibility of a similar brochure on Institution research in the fields of history and art.

The Office publishes a newspaper, The Torch for internal use. The Torch is distributed to over 5,000 staff members of the Institution to keep them abreast of the people-oriented activities of the Smithsonian. The Torch also serves as an historical document and as a source of information for volunteers, docents, members of Smithsonian boards and former employees. OPA also distributes daily throughout the Institution pertinent news clippings from newspapers around the country, as well as transcripts of relevant television and radio news items.

In FY 1985, the Office continued to receive acclaim for the work of its staff. The brochure "Science at the Smithsonian" received an award from the Society of Technical Communication. Research Reports won awards from the American Association of Museums, the National Association of Government Communicators and the Society for Technical Communication. Finally, a 30-second television public service announcement on attractions for children won a Gold Screen award in a major competition sponsored by the National Association of Government Communicators.

The Office of Public Affairs played a major role in the FY 1985 and FY 1986 programs for the Festival of India celebration. The Office of Public Affairs has actively encouraged publicity for Festival activities in India and the United States. To that end, information gathered by a news team sent to India during FY 1985 has been incorporated into a special package of 13 feature stories on aspects of India today.

The Office of Public Affairs is working to improve the effectiveness and distribution of Smithsonian News releases; increase the circulation of the News Service articles

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in ethnic newspapers; and improve the use of technological advances to increase the efficiency of processing news items. Additionally, A Guide for Disabled Visitors, a supplement to the Welcome brochure, will be revised and expanded to include not only new activities, but more importantly, to reflect the latest improvements in facilities designed to meet the special needs of handicapped visitors.

EXPLANATION OF PROGRAM INCREASE - Quadrangle-related Support ($31,000) - A sum of $31,000 is requested in FY 1987 to finance an information campaign on the opening of the Sackler Gallery, International Center, National Museum of African Art and Haupt Garden. The media information campaign will be coordinated by the Office of Public Affairs in cooperation with the staffs of the Arthur M. Sackler Gallery, the National Museum of African Art, and the International Center.

The programs and exhibitions of the Quadrangle will reflect the efforts of many of the Institution's curatorial and programming components. For the public to understand and to reap the full benefit of this complex and important addition to the international museum and research communities, it is vital that comprehensive and accurate information be made readily available.

The requested increase of one-time costs of $31,000, would cover the creation of an English Quadrangle inaugural brochure, which would be distributed at the information desks of the Quadrangle and its components, through the mail, and by various other means ($19,000); the production of a television public service announcement outlining the rich offerings of the Quadrangle ($9,000); and photographs, slides and press kits ($3,000). These steps will ensure the success of the Quadrangle and its aims.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - I. Immediate Office, Assistant Secretary for Public Service: These funds are provided by an allotment which covers the salary of three full-time staff members. In FY 1985, Special Purpose funds were provided to support expenses associated with this Office's responsibility for management and coordination of the Festival of India programs and activities (actual expenditures of $204,000 in FY 1985). This involved planning for the major exhibition "Aditi: A Celebration of Life" and other exhibitions; a special Festival of India component of the Festival of American Folklife, as well as other performances, symposia, workshops and tours. These offerings highlighted the culture, music, dance, science, art, history and life of the country of India. In FY 1986, special outreach efforts are focused on: (1) pan-Institutional cooperation of efforts to reach wider and more culturally diverse audiences; and (2) development of programs appropriate for the opening of the new museums and International Center in the Quadrangle.

II. Office of Telecommunications: These funds are provided by allotments which support nine full-time staff members and expenses associated with the production of educational and informational materials for television, film and radio (estimated expenditures of $557,000 in FY 1986 and $590,000 in FY 1987). In addition, a nominal amount of subscription fees is received to help defray some of the production and distribution costs. Additional funds are obtained through sales of films and video tape programs. The Office produces three ongoing series of programs which reach the American public regularly through radio and television. "Here at the Smithsonian" and "Radio Smithsonian" are financed partly by an allotment and partly by subscriber fees. "Smithsonian Galaxy" is supported by an allotment.

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III. Visitor Information and Associates' Reception Center: These funds are provided by an allotment and are used primarily to support 22 full-time staff members associated with the Center's work as the Institution's public service bureau responsible for the information and assistance activities described in the above program statement (estimated expenditures of $731,000 in FY 1986 and $783,000 in FY 1987).

IV. Office of Public Affairs: These funds are provided by allotments which support four full-time positions and expenses associated with public outreach activities such as publication of the Institution's "Welcome Brochure," Washington Post calendar, advertisements and public service announcements (estimated expenditures of $378,000 in FY 1986 and $404,000 in FY 1987).

Overall Special Purpose Funds: The reduction of $304,000 in expenditures between FY 1985 ($463,000) and FY 1986 ($159,000) mainly results from the one-time costs of the Festival of India ($204,000, Immediate Office, Assistant Secretary for Public Service; and $4,000, Office of Public Affairs) and the Smithsonian's participation in the 1984 Edinburgh International Festival in Scotland ($80,000) and funds from the Institution's Collections Acquisition, Scholarly Studies, and Educational Outreach Program and Smithson Society ($5,000, Immediate Office, Assistant Secretary for Public Service; $6,000, Office of Public Affairs; and $2,000, Office of Telecommunications). Estimated expenditures through the Collections Acquisition, Scholarly Studies and Educational Outreach Program and the Smithson Awards have not been recorded for FY 1986 and FY 1987 which explains the remaining variance in totals for those years.

Restricted Funds - Immediate Office, Assistant Secretary for Public Service: A grant from the Jimmy Carter Inaugural Trust supported the special performance programs and extended hours at selected Smithsonian museums during the 1985 Presidential Inaugural activities staged for the general public (expenditure of $ 67,000 in FY 1985). A small gift in FY 1985 supported the cost of mounting the "Rosalind Solomon: India" exhibition in the National Museum of Natural History/Museum of Man as part of the Smithsonian's Festival of India activities (actual expenditures of $3,000 in FY 1985).

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SMITHSONIAN INSTITUTION PRESS

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
			General		Special Purpose					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1985 Actual	29	1,124	35	13,645	-	49	-	58	-	-
FY 1986 -Base	29	1,121	35	11,975	-	-	-	11	-	-
-PL 99-177***		1,078								
FY 1987 Estimate	29	1,147	37	13,100	-	-	-	-	-	-

* FTE = Full-time equivalent
** FTP = Full-time permanent positions
*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	29	-	29
11 Personnel Compensation	838	17	855
12 Personnel Benefits	121	2	123
21 Travel	2	-	2
22 Transportation of Things	2	-	2
23 Rent, Communications & Utilities	8	-	8
24 Printing & Reproduction	83	4	87
25 Other Services	35	2	37
26 Supplies & Materials	9	-	9
31 Equipment	23	1	24
Total	1,121	26	1,147

Analysis of Increase

Necessary Pay	19
Inflation	7

ABSTRACT - The Smithsonian Institution Press is responsible for the editing, design, production, and distribution of printed materials prepared by staff scientists, historians, and curators. Such materials include research monographs, technical and scientific series, exhibition catalogues for Smithsonian museums, educational pamphlets, and informational leaflets. The Press is also responsible for the development, production, and business and marketing functions of the Institution's recordings program. In addition, the Press acts as the official agent of the Smithsonian Institution in procuring printing services from the U.S. Government Printing Office; in creating government forms, guides, instructions, and the like; and in providing professional assistance to

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Smithsonian authors upon request. No program increase is requested for FY 1987. Necessary pay of $19,000 is required for existing staff and an amount of $7,000 is sought to compensate for the effects of inflation in nonsalary areas of expense.

PROGRAM - The Federal publication activity of the Press is a fundamental extension of the Smithsonian's basic research activities. The scientific, technological, and historical monographs published by the Press make the results of research conducted by Smithsonian curators and staff experts available to libraries, museums, scientific institutions, and interested members of the public throughout the world. In addition to publishing research findings, the Press edits and designs exhibition catalogues, educational pamphlets, and informational leaflets that serve the millions of visitors to the Smithsonian in Washington, D.C. and the extensive programs conducted all over the Nation.

The Press also edits, designs, and produces Smithsonian Year, the Institution's annual report to the Regents and the Congress. In addition, the Press is responsible for publishing the annual report of the American Historical Association, and for the procurement and distribution, within the Institution, of a variety of necessary manuals, reports and directories.

Federally funded books published during FY 1985 included: "History of Botanical Exploration in Territorio Federal Amazonas, Venezuela" by Otto Huber and John J. Wurdack (Smithsonian Contributions to Botany, #54); "Geomorphologic Trends in a Glaciated Coastal Bay: A Model for the Maine Coast" by E. Craig Shipp, Stephanie A. Staples, and Walter H. Adey (Smithsonian Contributions to the Marine Sciences, #25); "Giant Camels from the Cenozoic of North America" by Jessica A. Harrison (Smithsonian Contributions to Paleobiology, #57); "Rails of the World: A Compilation of New Information, 1975-1983 (Aves: Rallidae)" by S. Dillon Ripley and Bruce M. Beehler (Smithsonian Contributions to Zoology, #417); and "United States Women in Aviation 1930-1939" by Claudia M. Oakes (Smithsonian Studies in Air and Space, #6).

The publications of the University Press Division of the Smithsonian Institution Press continue to receive acclaim for editing, design and production. The National Association of Government Communicators has consistently recognized Smithsonian editors, to whom it has given more than twenty-five Blue Pencil Awards during recent years for titles such as Washington Deco, Drawn from Nature, and American Popular Song. Design and production excellence has been frequently acknowledged: Drawn from Nature received an award from the Art Directors Club of New York and was cited as one of the best books of the year by the Association of American University Presses.

Federal publishing plans for FY 1987 will be determined primarily by the Press's client bureaus and offices and will depend upon the allocation of funds made available to those bureaus for publication purposes. Press records show that requests for publication have leveled off. Figures over the last several years show 301 jobs sent to the Press in FY 1982, 310 in FY 1983, 314 in FY 1984 and 322 in FY 1985. By mid-January of 1986, 98 publication requests had been received and an estimated 345 requests are projected for the current fiscal year.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Fund - These funds are derived from the sale of Trust-funded books, recordings, royalties, and special publishing services. These areas support ten staff members within the Press's University Press Division, 16 members of the staff of the Smithsonian Books Division, and nine members of the Recordings Program. These funds also support the necessary services required to develop, market, warehouse, and distribute records and scholarly and general-interest books, which are published in connection with the Institution's research, collections, exhibitions, and other programs. Some of the scholarly and trade books published during

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1985 include : A Field Manual of the Ferns and Fern-Ally of the United States and Canada, by David B. Lellinger; A Legal Primer on Managing Museum Collections, by Marie C. Malaro: Aditi, The Living Arts of India; The Mystery of Comets, by Fred L. Whipple; Sharing Traditions: Five Black Artists in Nineteenth-Century America, by Lynda Hartigan; Sculpture and the Federal Triangle, by George Gurney.

The Smithsonian Collection of Recordings has published a number of popular recordings suitable for marketing by direct mail to Smithsonian Associates and other mailing lists. In 1985, Big Band Jazz won two prestigious Grammy awards, presented by the National Academy of Recording Arts and Sciences. The Smithsonian Collection also has issued numerous recordings of scholarly interest, which have enjoyed limited but consistent sales. The program's goals are to continue publishing outstanding recordings and to distribute them in an efficient and cost effective manner.

Smithsonian Books, a division of the Press, publishes illustrated books for a general audience on subjects that relate to Smithsonian collections and research interests. They are marketed primarily by direct mail to Smithsonian Associates and other mailing lists, and also are sold to the general public through several trade publishers. The goals of the program are to continue publishing books of general interest to the Associates that are well-written and carefully researched; and to assure the commercial success and critical acclaim of the publication.

In FY 1985, the Smithsonian Press received a one-time special purpose fund to publish the catalogue for the "Aditi: A Festival of Life" exhibition (expenditures totaled $49,000 in FY 1985).

Restricted Funds - Funds are provided in the form of gifts and foundation grants from individuals, organizations or corporations for specific purposes. In FY 1985, a gift was used to pay for a portion of the production costs of the book Drawn from Nature (expenditures of $45,000 in FY 1985).

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ASSISTANT SECRETARY FOR MUSEUM PROGRAMS

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS: FEDERAL FUNDS FTE*	FEDERAL FUNDS Amount	UNRESTRICTED FUNDS: General FTP**	General Amount	Special Purpose FTP**	Special Purpose Amount	RESTRICTED FUNDS FTP**	RESTRICTED FUNDS Amount	FEDERAL GRANTS & CONTRACTS FTP**	FEDERAL GRANTS & CONTRACTS Amount
FY 1985 Actual	16	593	-	14	-	82	3	377	-	2
FY 1986 -Base	19	728	-	15	-	53	3	483	-	1
-PL 99-177***		703								
FY 1987 Estimate	19	748	-	18	-	53	3	437	-	-

* FTE = Full-time equivalent
** FTP = Full-time permanent positions
*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	19	-	19
11 Personnel Compensation	534	13	547
12 Personnel Benefits	70	2	72
21 Travel	16	-	16
22 Transportation of Things	19	1	20
23 Rent, Communications & Utilities	12	-	12
24 Printing & Reproduction	5	-	5
25 Other Services	17	1	18
26 Supplies & Materials	11	-	11
31 Equipment	44	3	47
Total	728	20	748

Analysis of Increase

Necessary Pay	15
Inflation	5

ABSTRACT - The Office of the Assistant Secretary for Museum Programs assists and advises the Secretary on the coordination and direction of the Institution's central museum support activities; supervises special projects affecting Smithsonian museum operations and facilities; and maintains close ties with national and international museum organizations. The Office also furnishes advice and technical assistance to other museums; performs studies on the effectiveness of museum exhibitions, programs and management methods; conducts training seminars and workshops for museum personnel; and disseminates technical information on museum practices. Also included in this line item is the Office of Museum Programs. The Offices of Horticulture and South Group Buildings Management, which report to this Office, are included in the Facilities Services section of this budget request since their functions relate closely to those of the Office of Plant Services. No program increase is requested for FY 1987. Necessary pay of $15,000

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is required for existing staff and an amount of $5,000 is sought to compensate for the effects of inflation in nonsalary areas of expense.

PROGRAM - I. Immediate Office, Assistant Secretary for Museum Programs - With base resources of 7 workyears and $361,000, this Office administers, oversees, reviews and supports: the Office of Museum Programs; the Office of Exhibits Central; the Office of the Registrar; South Group Buildings Management; the Conservation Analytical Laboratory; the National Museum Act; Smithsonian Institution Traveling Exhibition Service; the Office of Horticulture; Smithsonian Institution Libraries; and the Smithsonian Institution Archives.

In addition, the Office coordinates and supports projects related to the development and improvement of facilities, operational methods, and exhibition programs of the Smithsonian museums, including the Museum Support Center (MSC) and the Collections Management/Inventory Program. Since FY 1979, these responsibilities have encompassed the accelerated inventory effort and the process of refinement and reconciliation of collections records. The Office has worked closely with the General Services Administration, the architects and the museums that occupy the facilities of the Museum Support Center to develop the specifications for the storage equipment to be used, to plan the transfer of the collections, and to implement the operating requirements.

The Office of the Assistant Secretary for Museum Programs works closely with museum organizations and professionals. Among these organizations are the American Association of Museums and the International Council of Museums. This involvement promotes the scholarship, exhibition, and educational functions of museums; encourages the development and application of new techniques for museum administration and practices; and supports museum training programs, particularly those in conservation.

II. Office of Museum Programs - With base resources of 12 workyears and $367,000, the Office of Museum Programs conducts specialized services and training programs for museum personnel from American and foreign museums. These programs include those designed particularly for the Native American community; internships in museum practices; and visits to the Smithsonian for museum professionals. The Office plans and conducts special conferences and consultations on museum matters and provides program supervision for the Museum Reference Center, which is the major library source for museological information in the United States. The Office also produces informational and audio-visual presentations on conservation and museum practices for distribution to museums and educational organizations. Moreover, the Office currently is involved in a three-year study to investigate how museums can increase their educational contributions to the community. The Museum Training Program offers workshops and seminars taught primarily by Smithsonian staff for individuals employed by museums throughout the United States and abroad. These courses concentrate on improved museum practices in such areas as management, design and production of exhibitions, conservation awareness, educational programming, registration methods and automation, public relations and publications, audiovisuals, library and archival organization, curation and collections management, and security. New subjects offered and planned for FY 1986 include: horticulture in zoological habitats and environments, families in museums, volunteer management, and older adults and museums. In FY 1985, 30 workshops attracted approximately 700 museum professionals.

During 1985-1986, a program of 17 on-site workshops is being conducted. This program makes it possible to present training opportunities to the personnel of local and regional museums who are unable to attend the workshops given in Washington, D.C. In FY 1985, the Office of Museum Programs, working through cooperating museums, conducted two workshops on "Preventive Care of Collections" for museum professionals in Pakistan. This reflects an increasing number of requests, particularly from third world countries, for museum training abroad.

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Since 1977, the Office of Museum Programs has served more than 1,000 Native Americans, their museums and cultural institutions through workshops, internships, publications, slide-tape programs and other technical assistance activities geared to the special needs of this community. Since 1974, the audio-visual conservation information program has produced 115 programs and distributed over 7,000 videotapes and slide-cassette programs illustrating museum practices and techniques with emphasis on conservation, care of collections and education. As interest in conservation grows, the national and international demand for use of this unique service increases. "Tribal Archives" produced by the Native American Museums Program received the National Association of Government Communicators' Gold Screen Award for 1984 and "Museum Accessibility for the Visually Impaired," an Audio-visual Program production, received a Merit Award for Accessibility at Superfest, an international media festival on disabilities.

In FY 1985, more than 125 museum professionals and students from the United States and other countries participated in the Museum Practices Internship Program conducted by the Office in cooperation with various bureaus and offices of the Institution. This program places interns with those Smithsonian units that can provide the appropriate experience to the individuals. In addition, a special Museum Careers Seminar is offered regularly by the Office to all Smithsonian interns. The number of such interns has been growing and is expected to increase during FY 1986. More than 160 museum professionals, almost half from foreign countries, participated in the Visiting Professionals Program during 1985.

A new program granting awards to minority museum professionals was initiated in June 1984. In FY 1985, 24 minority museum professionals were awarded up to $500 each to help defray the cost of travel to Washington, D.C., so that they might attend a workshop of their choice and spend a second week in residence at the Institution as a Visiting Professional. Plans are underway to continue the program.

Three major projects consisting of 30-day instructional tours of United States museums for foreign museum professionals are conducted by the Office of Museum Programs with United States Information Agency cooperation and funding. These are: "Education in Museums," a multi-regional program which enjoyed its sixth year in 1985; "Museum Administration," a European regional program now in its third year; and "Collections Management, Preventive Care, and Conservation Awareness" another multi-regional program, which was held for the first time in February 1985. The United States Information Agency has requested a fourth program on museum management for Latin Americans for 1986.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - The Office of Museum Programs has two revolving trust funds for training and for the audio-visual loan program to accommodate small fees for services. A separate fund records the sale and the biennial revision of the Office of Museum Programs' publication Museum Studies-International, now being distributed in cooperation with the International Council of Museums. An allotment provides for the Awards for Minority Museum Professionals.

Restricted Funds - The Office of Museum Programs received a grant of $1.1 million from the Kellogg Foundation in 1982 for a project to "expand the educational influence of museums." The purpose of the grant is to enable the Smithsonian to assume a leadership role in the establishment of a network of museums in the United States to examine issues and provide means of implementation so that museums can increase their educational impact in their communities. All aspects of museum operations are being explored with decision-makers from museums and with representatives from other educational resources. Colloquia, regional workshops, demonstration projects, residencies, and videotapes are being organized and presented to involve more than 400 museums (estimated expenditures of $482,000 in FY 1986 and $425,000 in FY 1987).

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OFFICE OF THE REGISTRAR

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
			General		Special Purpose					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1985 Actual	1	32	-	-	-	-	-	-	-	-
FY 1986 -Base	1	99	-	-	-	-	-	-	-	-
-PL 99-177***		95								
FY 1987 Estimate	2	102	-	-	-	-	-	-	-	-

* FTE = Full-time equivalent
** FTP = Full-time permanent positions
*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	1	-	2
11 Personnel Compensation	46	1	47
12 Personnel Benefits	7	-	7
21 Travel	3	-	3
23 Rent, Communications & Utilities	7	-	7
24 Printing & Reproduction	1	-	1
25 Other Services	8	-	8
26 Supplies & Materials	2	-	2
31 Equipment	25	2	27
		-	
Total	99	3	102

Analysis of Increase

Necessary Pay	1
Inflation	2

ABSTRACT - The Office of the Registrar is responsible for the development, oversight and coordination of the Smithsonian's collections management policies. This entails advising management on accountability, procedures and information management techniques as they pertain to records associated with collections. To this end, the Office of the Registrar is charged with supervising cyclical collections inventories and other inventory-related activities such as the reconciliation of findings with existing records. No program increase is requested for FY 1987. Necessary pay of $1,000 is required for existing staff and an amount of $2,000 is sought to compensate for the effects of inflation in nonsalary areas of expense.

PROGRAM - In 1976, the Office of the Registrar shifted from an emphasis on records keeping to an emphasis on improving collections management policies and practices in all Smithsonian bureaus.

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The Office works with the directors of Smithsonian Institution museums, heads of other collecting units and with registrarial staff in the museums to coordinate development and processing of collections management policy documents and procedures. The Office also maintains close working relationships with other Smithsonian units including the Office of Information Resource Management, the Office of Audits and Investigations, and the Office of General Counsel, all of which have a vital interest in the documentation and accountability of the Smithsonian collections. Through these activities, the Office monitors registrarial and collections management functions and provides regular reports to Smithsonian management on their effectiveness.

In FY 1977, Institutional recognition of the critical role of collections inventory control resulted in the responsibility being given to this Office for the development and application of a basic inventory policy applicable to the initial inventory effort and to subsequent cyclical re-inventories. The Office regularly gathers summary inventory data from all museums and collates it for the management of the Institution.

Other responsibilities of the Office of the Registrar include coordinating the Smithsonian Registrarial Council through which interbureau registrarial business is conducted and cooperative procedures are developed. It is also responsible for maintaining contact with national and international organizations concerned with the application of computers to collections management functions and with other museums involved in the development of systems for similar application. In cooperation with the Office of Museum Programs, the Office of the Registrar conducts regular seminars and workshops on the information management aspects of collections management and on other matters of interest to museum registrars.

The crucial role of records in the inventory process underscores the irreplaceable nature of the Institution's collections records. To assure the safety of these records while making their contents accessible for accountability and research purposes, the Office is responsible for investigating the use of new technologies to generate and maintain security copies of all such records.

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CONSERVATION ANALYTICAL LABORATORY

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
			General		Special Purpose					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1985 Actual	32	1,783	-	-	-	29	-	-	-	-
FY 1986 -Base	39	2,019	-	-	-	1	-	-	-	-
-PL 99-177***		1,945								
FY 1987 Estimate	39	2,069	-	-	-	1	-	-	-	-

* FTE = Full-time equivalent
** FTP = Full-time permanent positions
*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	39	-	39
11 Personnel Compensation	1,209	19	1,228
12 Personnel Benefits	139	3	142
21 Travel	41	2	43
22 Transportation of Things	26	1	27
25 Other Services	276	12	288
26 Supplies & Materials	131	5	136
31 Equipment	197	8	205
Total	2,019	50	2,069

Analysis of Increase

Necessary Pay	22
Inflation	28

ABSTRACT - The Conservation Analytical Laboratory (CAL) performs research on the conservation-related properties of materials, the improvement of conservation treatment technology, and the extraction of information of historical importance from the material's technical record. Within these areas of interest, it also provides Institution-wide support to conservators and curators in the Smithsonian museums. CAL advises and assists the Smithsonian and other museums in the study, preservation and conservation of objects of artistic, scientific, cultural and historical importance. It conducts basic research in conservation by studying the physical characteristics of materials, the effects of environmental factors and the chemical processes involved in the deterioration of objects, and applies this knowledge by developing and testing techniques for the stabilization of deteriorating objects. Other research seeks to establish the relationship between objects and the societies that produced them, as this is reflected in the material makeup and the manufacturing technology. CAL conducts the

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Conservation Training Program at the Museum Support Center, which includes advanced conservation training, supports and organizes workshops and seminars, and provides other opportunities for the dissemination of the latest knowledge in the field of conservation to museums and research professionals throughout the United States and the world. No program increase is requested for FY 1987. Necessary pay of $22,000 is required for existing staff and an amount of $28,000 is sought to compensate for the effects of inflation in nonsalary areas of expense.

PROGRAM - The Conservation Analytical Laboratory is a specialized facility at the Smithsonian devoted to all aspects of the conservation and technical study of museum objects. CAL provides scientifically based examinations of objects, studies the conservation-related properties of their materials, provides treatments for their protection and preservation, and performs analyses and technological studies of objects to elucidate their cultural and historical context. Furthermore, CAL gathers and disseminates conservation information to assist museums, both within the Smithsonian as well as elsewhere, in the care of their collections; monitors and advises on the environmental conditions in which Smithsonian museums display and store their collections; and conducts and assists conservation training programs.

CAL's activities are carried out in a number of interrelated programs--Conservation Treatment, Conservation Science, Archaeometry, Information, and Conservation Training. CAL's unique combination of research and practical conservation work enables the knowledge gained from state-of-the-art scientific research to be applied directly to the actual treatment of objects. Moreover, the diversity of the objects treated and the wide variation in their state of preservation provide a unique opportunity to develop the experience needed to define directions for scientific research in conservation. CAL's milieu of active conservation treatment, supported by specialized scientific facilities and stimulating more basic research in conservation science, is also extremely appropriate for the advanced education of conservators and conservation scientists.

Conservation Treatment - CAL, with its specialized facilities at the Museum Support Center, provides treatments for objects from the collections of all Smithsonian museums which present special conservation problems requiring scientific analysis by conservation scientists and the use of more specialized equipment than is available within the museums. Routine maintenance and less complicated treatments of collection items are performed increasingly by conservation staff members of the individual museums.

A partial listing of items treated during FY 1985 reflects the wide range of expertise represented among the members of CAL's conservation staff: a number of 19th- and 20th-century American furniture pieces (Renwick Gallery, the Cooper-Hewitt Museum and the National Museum of American History); contemporary weavings by Anni Albers (Renwick Gallery); wooden ritual statues decorated with glass beads from Cameroon (Smithsonian Institution Traveling Exhibition Service (SITES)); artists' designs for Mouton-Rothschild wine labels (SITES); plaster sculpture and models by Calder and Kamoyes (National Museum of American Art); numerous works of art on paper including hand-colored mezzotints, linocuts, and watercolor and graphite drawings (National Portrait Gallery); several paintings by Harvey Dunn, depicting World War I battle scenes and executed under actual frontline conditions (National Museum of American History); a contemporary copper sculpture by Claire Falkenstein (National Museum of American Art); and a variety of Middle Eastern archeological objects, including gold, silver, bronze, ivory, ceramic and stone objects, for the exhibition "From Ebla to Damascus" (SITES).

Stimulated by problems encountered during the treatments which they performed, CAL conservators initiated a number of research projects, generally in collaboration with members of the scientific staff, on such subjects as the effects of the materials used in weighting silk on the deterioration of the fibers; the nature of a red discoloration sometimes encountered on white pigments in drawings; metal corrosion processes induced by

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fatty acid treatment materials; the effects of fumigation with ethylene oxide on the chemical stability of cellulose materials; and the removal of paper degradation products during washing procedures. CAL conservators presented papers and lectures on these and similar subjects at a number of professional meetings.

A team of CAL conservators and conservation scientists assisted the National Air and Space Museum (NASM) through a comprehensive examination and condition evaluation of the Wright Brothers' Flyer, prior to its restoration by NASM staff members. The results of this examination, which included the scientific analyses of a number of samples taken from various parts of the airplane, aided the staff of the Museum in the planning and execution of the restoration, and was followed by advice on particular phases in that process and by preservation treatment of the removed textile covering.

The program for environmental monitoring in various museums and bureaus continued, using 85 hygrothermographs placed in 13 Smithsonian buildings. General fumigation activities were suspended because of the dangerous nature of the chemicals involved and the difficulty in maintaining adequate safety at the facilities on the Mall. Fumigation will resume upon the completion of the new facilities at the Museum Support Center late in FY 1986.

Conservation Science - The conservation scientists at CAL are involved in a wide variety of research projects while providing analytical and technical support services to conservators and curators Institution-wide. Research activities, often performed in collaboration with conservators, relate to conservation problems of a broad interest to museum professionals, while service activities involve chemical and physical analyses and technical examinations of objects from the Institution's collections which help to provide a basis of knowledge and understanding from which specific preservation measures for the object can be formulated.

During FY 1985, a study was undertaken of the effects of high energy electromagnetic radiation (like that emitted by X-radiography machines) on the aging properties of oil paint media. This study is also expected to yield general kinetic observations on the degradation of oil paints, and the influence of such variables as pigment composition. Research continued on the interaction of the architeccural design and climate control in historic structures and other museum buildings, using specially designed electronic monitoring equipment which can be implanted within walls for a continuous record of heat and humidity transport phenomena. Another study involved the measurement of the dimensional changes induced in the joints of wooden flutes by the humidity variations during playing, and the effects of the joint packing material on the physical stability of the wood. In preparation for the fumigation activities at the Museum Support Center, a study was initiated on the effect of the fumigant sulfuryl fluoride on the materials of museum objects. Also, a current bibliography on various aspects of museum pest control was commissioned from a recognized authority on this subject. This bibliography will be made available to other museum professionals. The recently installed gas chromatograph-mass spectrometer enabled CAL scientists to perform highly sophisticated analyses of organic substances and opened new avenues in analytical services and conservation research, including preparations for analytical projects on resins of ethnographical importance and on historic pharmaceuticals.

Conservation scientists supplied a wide variety of support services, including the testing of materials to determine their suitability for storage or exhibition of museum objects, including storage equipment proposed for use in the Museum Support Center. Scientists also presented papers and lectures at a number of professional meetings.

Archaeometry - The field of archaeometry integrates the scientific analysis of objects with their archeological, anthropological, art historical and cultural backgrounds. The analyses provide curators, archeologists and historians with basic

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research data concerning materials, dates, attributions and historical technologies. In combination with contextual information, typological and stylistic analyses, these data may serve to answer questions of an anthropological or art historical nature.

During FY 1985, work continued on studies of archeological ceramics, involving both compositional and structural analyses, to elucidate questions of provenience and technology. Two areas of major concentration of efforts, in the Middle East and the American Southwest, were identified. For both areas major projects were initiated, aiming at establishing a base of interinstitutional and international collaboration. A new Middle Eastern project, focusing on the archeology of the Indo-Iranian borderlands, complements ongoing research in CAL on Near and Middle Eastern archeological materials and is performed in collaboration with archeologists in Rome and Paris. A project initiating CAL's involvement in American Southwestern archeology, focusing on the relationships between Hopi Pueblos during the migration period (1300 - 1600 A.D.), started in the latter part of FY 1985. In addition, work on ceramics from Mexo and Central America and Spain continued.

In collaboration with scientists at the National Bureau of Standards (NBS) and the Corning Museum of Glass, research continued on provenience studies of ancient bronzes and glasses by means of lead isotope analysis. Another collaborative effort with NBS involved the study of paintings using neutron-induced autoradiography. With this technique, information regarding distribution of pigments below the surface of the painting can be obtained nondestructively. In collaboration with the Metropolitan Museum of Art (MMA), a project on the technique of Rembrandt, started by the MMA in cooperation with Brookhaven National Laboratory, was continued at CAL, while paintings by the American artist Thomas Dewing are studied in a joint program with the National Museum of American Art. Also in collaboration with NBS, studies were made on the application of neutron radiography to the structural study of objects.

The work of CAL's staff is complemented by that of pre- and postdoctoral fellows and research associates. In FY 1985, such research included work on the raw materials of European Iron Age Glass, the use of specular hematite as a pigment on Mayan ceramics, provenience studies of North African medieval ceramics, and Roman period iron technology in Britain.

The Smithsonian Archaeometry Research Collections and Records (SARCAR) database now contains about 22,000 analytical data sets of archeological materials studied at Brookhaven National Laboratory and at CAL. This development will continue in FY 1986. As a result, SARCAR is well on its way to becoming a major research database for archaeometrical studies. Also, an important sample and reference material collection of archaeo-metallurgical interest was donated to SARCAR.

Research continued on the application of electromagnetically induced conductivity measurements for the prospection of archeological sites in the Middle East. This technique, developed at CAL, was used successfully to locate and assess the condition of tomb sites in Bahrain, while preliminary surveys were conducted in Kuwait and Jordan. As with many other archaeometry projects, this research was carried out in close cooperation with the Department of Anthropology of the National Museum of Natural History/Museum of Man.

CAL archaeometry staff members presented papers and lectures at a number of professional meetings. CAL also cosponsors a series of joint seminars with NBS, and another with the Department of Anthropology of the National Museum of Natural History.

Information - CAL's information program seeks to maintain and expand current information files on conservation and archaeometry literature, technical information, commer-

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cial products data, and internally generated reports. Among others, a reprint file containing over 12,000 entries, to which annually about 1,500 new entries are added, provides CAL researchers, and others Institution-wide, fast and direct access to almost all literature of relevance in conservation and archaeometry. The information program staff also responds to a large number of public inquiries regarding preservation. During FY 1985, an average of 25 inquiries per week were handled, in cooperation with the expert conservators on the CAL staff. An ever increasing number of requests for information assistance is received from conservators in museums all over the United States. In FY 1986, further progress is expected in the computer-based indexing of the information files.

Conservation Training - During FY 1985, CAL initiated a number of new activities in its conservation training program. These activities endeavored to make significant educational contributions to the field, without as yet embarking upon a program of basic training as presently offered by a number of universities nationwide. CAL is, however, assessing critical needs with regard to conservation training, and the possibilities for the Smithsonian to respond to some of them. CAL's activities to date are based on such assessments. In FY 1985, five advanced specialist courses for conservators were organized. These courses covered a wide variety of topics: suction tables for paper conservation, wood identification, polymer chemistry, conservation of ancient glass objects, and reproduction molding. In addition, CAL cosponsored three other courses on microscopy for conservators and basic metallurgy. These specialty courses, which typically last a few days to a week and are aimed at practicing conservators, cover subjects which normally are not dealt with in general training programs, but are of vital interest for conservators working with certain types of collections. CAL plans to continue organizing such courses in FY 1986.

Another mechanism by which CAL seeks to contribute to the national conservation training effort is through the hosting of interns at various levels of training and experience. In FY 1985, a visiting conservator from the Netherlands spent a half-year in CAL's furniture conservation laboratory. During the summer, four interns worked with the textile conservator as part of their training elsewhere. Two candidates were selected for student internships of one year, one of which started in late FY 1985. CAL also initiated a program of postgraduate conservation internships and the first intern started in late FY 1985.

CAL announced its new training program for furniture conservators. This program, which will consist of a series of intensive courses spread over a three-year period followed by an one-year internship, will start in late FY 1986.

In addition to training conservation professionals, CAL plays a role in providing conservation-related education for other museum professionals. CAL conservators frequently served as faculty for such workshops, both at the Smithsonian and other institutions.

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SMITHSONIAN INSTITUTION LIBRARIES

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
			General		Special Purpose					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1985 Actual	91	4,289	9	312	-	11	-	35	-	-
FY 1986 -Base	96	4,664	10	335	-	109	-	10	-	-
-PL 99-177***		4,455								
FY 1987 Estimate	98	4,836	10	351	-	2	-	10	-	-

* FTE = Full-time equivalent
** FTP = Full-time permanent positions
*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	96	2	98
11 Personnel Compensation	2,503	85	2,588
12 Personnel Benefits	314	11	325
21 Travel	23	1	24
22 Transportation of Things	12	-	12
23 Rent, Communications & Utilities	56	2	58
24 Printing & Reproduction	156	6	162
25 Other Services	617	25	642
26 Supplies & Materials	444	19	463
31 Equipment	539	23	562
Total	4,664	172	4,836

Analysis of Increase

Necessary Pay	64
Inflation	76
Program Funds	32

ABSTRACT - The Smithsonian Institution Libraries (SIL) serves the Institution and the public through: (1) support of Smithsonian research, curatorial, publication and other program activities; (2) direct participation in the creation of a national bibliographic data base; and (3) programs for publications, exhibitions, loan and information services. Its collections of approximately 960,000 volumes, including over 20,000 serial subscriptions, are available to Smithsonian and outside scholars through a system of 15 branch libraries in 36 locations in the Washington, D.C. area, at the Smithsonian Astrophysical Observatory (Massachusetts and Arizona), the Cooper-Hewitt Museum (New York City), and the Smithsonian Tropical Research Institute (Panama). The Libraries also provides coordination and support for other Smithsonian bureaus that administer their own library collections, such as the National Museum of American Art and National Portrait Gallery library and the library of the Center for Asian Art. Moreover,

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the Libraries is responsible for the purchase of all books and related materials for other Smithsonian bureaus, and coordinates all requests for automated information sources to avoid duplicative efforts within the Institution. For FY 1987, an increase of 2 workyears and $32,000 is requested to provide expanded support for the research library collection in the Quadrangle. Necessary pay of $64,000 is required for existing staff and an amount of $76,000 is sought to compensate for the effects of inflation in non-salary areas of expense.

PROGRAM - With its collections of approximately 980,000 volumes and its system of branch libraries, the Smithsonian Institution Libraries provides centralized Institution-wide support and specialized branch research collections to serve the research, curatorial and other bibliographic needs of Smithsonian bureaus and staff. The central collections emphasize multidisciplinary research journals, proceedings of academies of science, and interdisciplinary topics such as ecology, exploration and travel, and museology. The specialized collections in the branch libraries are outstanding in natural history, American ethnology and culture, tropical biology, decorative arts and design, astrophysics and the history of science and technology. Rapidly developing collections include aeronautics and astronautics, African art, and conservation research. SIL's collections also include approximately 35,000 volumes of rare books, primarily in the fields of science, technology, applied art, aerospace, and natural history. The largest of these rare book collections is the Dibner Collection in the History of Science and Technology, consisting of 19,000 volumes and manuscripts, which is one of the most comprehensive collection of its kind in the world.

The SIL comprises three operational divisions: collections management, responsible for the selection, acquisition, preservation, and housing of library collections essential to Smithsonian research work; automated systems, responsible for the application of automated systems to support all library functions, including the indexing and automated inventory control of SIL collections; and research services, charged with direct, individual assistance to and interpretation for the scholarly clientele of the Libraries. Through centralization of certain operations, including an interdisciplinary reference/information center, acquisitions and cataloguing units, a consolidated administrative staff, and a conservation laboratory, the Libraries has achieved system and cost efficiencies. Branch libraries housed within the museums and research units of the Institution provide direct services to scholars and others through pertinent book collections and specialized reference services.

Collections Management - This function includes selection, acquisition, deaccessioning, preservation, and determination of collections management policies for SIL. A materials selection committee develops collection policies and recommends books and journals for acquisition. During FY 1985, the Libraries purchased over 7,900 monograph titles and approximately 2,830 serial titles. In addition, the Libraries received a number of gift collections.

The Libraries' conservation program, implemented by a Book Conservation Laboratory, is charged with remedying the deterioration of SIL's valuable materials resulting from improper storage conditions. For the past nine years, SIL has microfilmed books to preserve material that had become too brittle and crumbling to be handled by researchers.

Automated Systems - Sophisticated electronic technologies continue to be fundamental to SIL planning for growth in the areas of information transfer and resource sharing. Since 1974, SIL has used the On-line Computer Library Center, Inc. (OCLC), a national bibliographic data base, as a major data source for creation of its own bibliographic records. SIL has in turn contributed these catalogue records to the OCLC data base, thus sharing with other libraries in the reduction of cataloguing costs while making its bibliographic records available to researchers in all 6,000 member libraries. With

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funding provided in FY 1986, the Libraries has begun the last phase of converting its older manual bibliographic records into machine readable format.

The Smithsonian Institution Bibliographic Information System (SIBIS), developed and implemented by the Libraries and the Institution's Office of Information Resource Management, became operational in July 1984. It is anticipated that all component functions of SIBIS will be fully on-line by December 1986. Important advantages for research resulted from the introduction of the SIBIS-SIL on-line catalogue. In addition to having access from all SIL branch libraries, researchers in the field are now able to dial into the SIL catalogue by using a computer/telecommunication link. Eventually, researchers with specific needs can relay them on-line from their offices or elsewhere, saving a visit to the library. Vastly improved searching power (including Boolean search strategies) will allow users to discover documents through approaches not possible before.

Research Services - The Research Services Division of SIL provides a full range of reference support for scholars in all fields of interest to the Institution. Its staff is stretched not only over myriad fields of intellectual inquiry, but also over a very broad geographic area; it is organized in 13 branches operating in 36 different locations in Washington, D.C.; Cambridge, Massachusetts; New York City; and Panama.

In order to locate appropriate sources and provide the information needed by SI researchers, SIL staff makes use of both manual reference tools and on-line data bases. During FY 1985, the 50 SIL branch library staff members answered 140,442 reference questions including on-line searches of automated bibliographic data bases. At least 30,007 items were circulated to Smithsonian staff, and 16,971 photocopies of journal articles and other material were provided instead of circulating originals.

The national system of interlibrary loans, developed by the American Library Association (ALA), allows libraries to supplement their own collections by requesting the loan of material from other libraries instead of having to purchase it. With the development of national bibliographic data bases, such as OCLC, processing of interlibrary loan requests has become much more efficient because requesting libraries can locate all the libraries possessing the needed material at one time through a computer search of the data base and can request the loan of the material by computer as well. To serve research needs which cannot be met from its own holdings, SIL borrowed 17,342 volumes in FY 1985. SIL loaned 4,864 items from its collections to users in other institutions, and staff also photocopied 5,018 journal articles for scholars outside the Smithsonian.

Quadrangle Project: African Art Branch Library - Since the goal of the Quadrangle is to be an educational and research center for non-western cultures, close cooperation between the SIL branch in the National Museum of African Art and the library of the Center for Asian Art is both important and necessary. Through the SIBIS on-line catalogue, both libraries will be able to provide their users with rapid bibliographic searches and a corresponding savings of time and effort in locating relevant volumes.

In FY 1985, the African Art Branch Library began a multiyear acquisition program to develop a collection that will support the expanded level of research that its location in the Quadrangle will require. Upon completion of this multiyear program, the African Art Library's collection will be able to begin to support comprehensive research in the field.

Outreach - The Libraries continues its commitment to national and international responsibilities in the areas of exhibitions, seminars, lectures, publications, and participation in national and international forums.

SIL produces a variety of publications which serve the Smithsonian staff, members of the national and international library and scholarly communities, and the general

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public. Two new volumes in the SIL Research Guide Series were issued this year, the first a selective bibliography published by Holmes & Meier entitled African Art: A Bibliographic Guide. The second, Manuscripts of the Dibner Collection: A Guide to Manuscripts in the Dibner History of Science and Technology Collection of the SIL, lists 1,614 manuscripts which reflect the history of science and technology from the high Middle Ages to the present, including papers of nearly every significant contributor to western science and technology during the past 900 years. Other SIL publications distributed included "Saving the Record: A Report on Preserving the Collections of the SIL"; "Book Collecting and the Care and Conservation of Books"; and an illustrated exhibition brochure for the "Panorama of India: Exhibition of Books, Prints and Manuscripts," an exhibition developed by SIL in conjunction with the Smithsonian's participation in the Festival of India.

Acquisitions lists and specialized bibliographies for collections for the National Zoological Park, the National Museum of African Art, the Anthropology Branch Library in the National Museum of Natural History, and the Museum Reference Center library were developed for distribution. In FY 1984 and FY 1985, SIL also presented lectures and seminars on the subjects of book preservation and bibliography. A number of SIL staff participated in presentations to special groups outside the Smithsonian on its collections and services.

With funding provided through the Institution's Special Foreign Currency Program, the SI Libraries administers the Science Information Program for Translations. This translation program, which makes available to American scholars a great number of scholarly articles and monographs on the natural sciences and cultural history originally published in foreign languages, has produced more than 195 published works since its inception in 1959. Beginning in 1985, works to be translated are recommended by a review committee consisting of representatives from the Libraries and several major Smithsonian bureaus. Examples of recent publications include Crayfishes of Mexico (translated from Spanish) and An Outline of the History of Metal Cutting Machines to the Middle of the 19th Century (translated from Russian). Approximately 650 copies of each work translated are distributed gratis to libraries and specialists in the United States and throughout the world.

EXPLANATION OF PROGRAM INCREASE - Quadrangle-related Support (2 workyears and $32,000) - For FY 1987, an increase of 2 workyears and $32,000 is requested to provide expanded support for the research library collection in the Quadrangle. With funding provided in FY 1985 and FY 1986, the Libraries has begun the development and expansion of the African Art Branch Library to support the bibliographic needs of the research programs in the Quadrangle. To satisfy the higher level of research support required by the expanded collections and the increased numbers of scholars who will use the library's resources in the Quadrangle, two library technician positions are requested (2 workyears and $32,000). With the addition of these two new positions (originally sought in the FY 1986 budget) the Libraries will be able to offer the full range of reference and central support services to scholars throughout the Smithsonian and from other institutions who use the library collections in the Quadrangle.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These funds are provided by allotments and are used primarily to support 10 full-time positions and related support costs including supplies, book binding and training (estimated expenditures of $333,000 in FY 1986 and $349,000 in FY 1987). In addition, a special purpose fund is currently being used to purchase books to support general research (estimated expenditures of $102,000 in FY 1986).

Restricted Funds - These are provided through gifts and grants from individuals, foundations, endowments, organizations or corporations for specific purposes. For

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example, restricted funds were used to publish Manuscripts of the Dibner Collection: A Guide to Manuscripts in the Dibner History of Science and Technology Collection of the SIL. A gift from the Dibner family provides funds for the purchase of rare volumes on the history of science (estimated expenditures of $5,000 in FY 1986 and in FY 1987). A grant from Time-Life will support the preparation costs for a future publication on international exhibitions (estimated expenditures of $5,000 in FY 1986 and in FY 1987).

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OFFICE OF EXHIBITS CENTRAL

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL[1] FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
			General		Special Purpose					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1985 Actual	44	1,470	-	-	-	87	-	-	-	-
FY 1986 -Base	42	1,603	-	-	-	32	-	-	-	-
-PL 99-177***		1,543								
FY 1987 Estimate	46	1,774	-	-	-	2	-	-	-	-

* FTE = Full-time equivalent

** FTP = Full-time permanent positions

*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	42	4	46
11 Personnel Compensation	1,240	96	1,336
12 Personnel Benefits	157	15	172
21 Travel	3	-	3
25 Other Services	64	3	67
26 Supplies & Materials	94	55	149
31 Equipment	45	2	47
Total	1,603	171	1,774

Analysis of Increase

Necessary Pay	21
Inflation	9
Program Funds	141

ABSTRACT - The Office of Exhibits Central (OEC) is an in-house resource of highly skilled exhibition specialists and well-equipped shops that participates in and supports the exhibition and exhibit-related programs of the Smithsonian Institution. These resources provide exhibit capability to Smithsonian units without full-time or specialized exhibition staff and supplement the capability of those units that have their own staff. OEC services are strictly museum-oriented, recognizing the demand for accuracy, meticulous attention to detail and extreme care in the handling of museum objects. The great majority of OEC projects are one-of-a-kind tasks, custom designed and produced for the exhibition of specific objects from the collections of the Institution or from other museums or private collections. For FY 1987, an increase of 3 workyears and $126,000 is requested to support expanded OEC activities for exhibition and related needs of the International Center located in the Quadrangle and to supplement the exhibition capabilities of the National Museum of African Art and the Sackler Gallery. A further amount of 0.5 workyear and $15,000 is required to annualize the partial year

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funding for 1 position approved in the FY 1986 budget for Quadrangle-related support. Necessary pay of $21,000 is required for existing staff and an amount of $9,000 is sought to compensate for the effects of inflation in nonsalary areas of expense.

PROGRAM - The Office of Exhibits Central provides professional services in the fields of exhibition design, label writing and editing, and a full range of exhibit production capabilities geared to the particular demands of museum presentations. The OEC Fabrication Unit includes a fully equipped cabinet shop, a custom paint shop and a sheet plastics shop experienced in the uses of all types of acrylics including ultraviolet filtering materials. The OEC Graphic Production Shop includes a complete state-of-the-art photo silkscreen lab, photo mounting capabilities and a staff trained in conservation-correct mounting and framing of original art works. The OEC Model Shop utilizes the most recent techniques of fluid and thermo-setting plastics as well as the more traditional materials and methods to create museum models and replicas of all types and sizes. The shop also provides a limited capability in freeze-dry taxidermy and fabricates custom mountings and brackets for all types of museum objects.

During FY 1985, the Model Shop completed work on a reconstruction of the jaw of a prehistoric shark, Carcharodon megalodon, containing over 300 teeth. This project required almost three years of development studies working with scientists from the National Museum of Natural History and the American Museum of Natural History. Three full-sized clay models of the over six-foot-high open jaw were required to finalize the correct anatomical detail. OEC model makers worked on other projects while the scientists checked these models against their formulations and developed the adjustments needed for scientific accuracy. The finished model will be installed in the Dinosaur Hall of the National Museum of Natural History and the molds will be loaned to the American Museum of Natural History so that a similar model can be produced for their exhibits. This year, the Model Shop made a life mask of Senator Edwin J. Garn, the first United States Senator to travel on the Space Shuttle. This mask, sculpted to a life-size mannequin dressed in a space shuttle uniform, will be used in an exhibition in the National Air and Space Museum. The Shop also produced exact models of owls' eggs for the National Zoological Park's Education Department. During the past year, OEC prepared mountings and brackets for over 300 museum objects, the majority of which were for the Smithsonian Institution Traveling Exhibition Service (SITES) exhibition "From Ebla to Damascus."

"From Ebla to Damascus," one of the 30 exhibitions designed and produced in FY 1985 for SITES, was the largest and most complex project undertaken during the past year by OEC. This exhibition contained over 300 archeological objects recovered in Syria, which vary in size and mass from a cylinder seal approximately one-half inch long to a Cult Basin of stone weighing 1,600 pounds, as well as 68 exhibit panels of interpretative and historical information. Earlier in FY 1985, OEC and SITES staff returned the exhibition "Treasures from the Smithsonian Institution" from Edinburgh, Scotland. Over 250 objects were safely returned to the 13 Smithsonian museums that participated in this major program of the Institution.

In FY 1985, OEC again provided graphic production support for the Festival of American Folklife, silkscreening and mounting 150 photographs on 123 panel surfaces that were installed on the Festival grounds. OEC also provided support to the Smithsonian Associates by designing, writing and editing, and supervising the printing of more than 70 brochures for its travel programs. Similar support also was provided for the Craft Show and Christmas programs of the Women's Committee of the Smithsonian Associates.

The OEC Fabrication Unit has also completed the second group of custom exhibition cases for installation at the Cooper-Hewitt Museum. These cases, designed by Cooper-Hewitt designers, were produced in OEC shops and then shipped to New York City where OEC staff installed them into the unique architectural interior galleries of the

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Cooper-Hewitt. In all, the OEC accepted and completed over 230 separate projects for Smithsonian units this year.

OEC staff continue to serve as faculty in the "Workshops for Museum Professionals" organized by the Office of Museum Programs and to consult on Institution-wide planning for exhibitions, graphics, and the design and uses of public spaces on The Mall and in the Smithsonian museums.

EXPLANATION OF PROGRAM INCREASE - Quadrangle-related Programs (3.5 workyears and $141,000) - For FY 1987, an increase of 3 workyears and $126,000 is requested to enable the Office of Exhibits Central to expand its support for exhibition and related needs for the Quadrangle. A further amount of 0.5 workyear and $15,000 is required to annualize the partial year funding for 1 position approved in the FY 1986 budget for the Quadrangle-related support.

With funding provided in FY 1986, OEC will hire one exhibit specialist to assist with the preliminary designs and models for the planned exhibition space of the new Quadrangle facilities. The requested increase for FY 1987 will allow the hiring of two additional exhibit specialists and one model-maker (3 workyears and $75,000), who will help produce cases, mount artifacts, develop and edit descriptive labels, and silkscreen exhibit materials for exhibitions being planned for the International Center and for SITES' new display spaces in the Quadrangle. In addition, this increase in staff will allow OEC to provide the specialized exhibition services necessary to supplement the exhibition capabilities of the National Museum of African Art and the Sackler Gallery as they develop the initial installation of permanent exhibitions in their new locations. A sum of $51,000 also is requested to purchase support items such as hand tools, exhibit materials, and safety equipment needed in the production of exhibitions.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These are provided by tuition fees received from local universities, proceeds from the sale of the OEC book A Freeze-Dry Manual through the Smithsonian Institution Press and reimbursements from internal Smithsonian units. These funds are used to purchase supplies, materials and services in support of OEC activities, to defray costs associated with special events and, as needed, to supplement a portion of travel expenses associated with consultation with other museum professionals (estimated expenditures of $32,000 in FY 1986 and $2,000 in FY 1987).

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SMITHSONIAN INSTITUTION TRAVELING EXHIBITION SERVICE

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
			General		Special Purpose					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1985 Actual	6	332	23	1,561	3	613	1	651	-	13
FY 1986 -Base	8	407	31	1,840	-	2	1	1,300	-	-
-PL 99-177***		363								
FY 1987 Estimate	15	601	33	2,003	-	-	1	560	-	-

* FTE = Full-time equivalent

** FTP = Full-time permanent positions

*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	8	7	15
11 Personnel Compensation	244	154	398
12 Personnel Benefits	36	19	55
21 Travel	10	-	10
22 Transportation of Things	64	3	67
23 Rent, Communications & Utilities	17	1	18
25 Other Services	28	1	29
26 Supplies & Materials	8	16	24
Total	407	+194	601

Analysis of Increase

Necessary Pay	6
Inflation	5
Program Funds	183

ABSTRACT - The Smithsonian Institution Traveling Exhibition Service (SITES) provides an important national service by offering carefully-selected, well-designed and widely-circulated traveling exhibitions covering a broad range of subject matter in the fields of art, design, technology, history, science, anthropology, space, education, and the environment. These include exhibitions from the Smithsonian's collections as well as those organized and loaned by other museums in the United States and abroad, foreign governments, private individuals, and organizations throughout the world. During the spring of 1986, facilities for SITES will be relocated in the Quadrangle. For FY 1987, an increase of 2.25 workyears and $54,000 is requested to reinforce SITES' staff support for its expanded program responsibilities in the Quadrangle. A further amount of 4.5 workyears and $129,000 is required to annualize the partial year funding for 6 positions approved in the FY 1986 budget for Quadrangle-related support. Necessary pay of $6,000 is required for existing staff and an amount of $5,000 is sought to compensate for the effects of inflation in nonsalary areas of expense.

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PROGRAM - The Smithsonian Institution Traveling Exhibition Service is the primary Smithsonian organization which originates and circulates traveling exhibitions. SITES (the largest service of its kind in the United States) provides a broad selection of exhibitions encompassing the diverse disciplines and subject matter represented in the collections of the Smithsonian, including art, natural history, design, archeology, anthropology, science and technology, decorative arts and crafts, and popular culture. SITES exhibitions are complete programs accompanied by curatorial and registrarial information, handling instructions, technical information, publicity materials, suggested educational activities, and, in most instances, exhibition catalogues. SITES also provides professional assistance to the museum field on a variety of topics including shipping and insurance of artifacts, installation techniques, exhibit security, design and upgrading of exhibition space, and contract matters.

SITES represents an important outreach and service program of the Smithsonian, sponsoring over 120 exhibitions in continuous circulation. These exhibitions are seen by approximately eight million people each year through local museums, galleries, and educational and cultural institutions in the United States and abroad. Since its establishment in 1952, SITES exhibitions have reached an audience of over 100 million people in 15,000 communities. Over 9,000 institutions receive Update, SITES' annual catalogue describing the available traveling exhibitions and publications; SITELINE, a quarterly newsletter; and special mailings providing information on specific exhibitions.

SITES' exhibitions are an essential element in the program and resource planning of thousands of exhibition-sponsoring organizations. These organizations benefit directly from the traveling exhibitions by being able to present an exhibit in their community for a fraction of the cost required to develop and produce the exhibition for themselves. The Federal support received by SITES allows exhibitions to be developed, toured and provided to these organizations at an affordable participation fee. Federal funding constitutes only 15 percent of SITES' total operating budget; the remainder is provided through exhibition fees, nonappropriated Trust fund support from the Institution, and outside grants and contracts. This Federal assistance, however, is essential to ensure that fees paid for exhibitions remain within the budgetary reach of participating museums and galleries across the United States — during FY 1985, 35 percent of SITES' traveling exhibitions were offered to exhibitors for a participation fee of $1,000 or less.

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During FY 1985, a total of 354 bookings for SITES' shows were scheduled in 208 cities in 44 states and the District of Columbia:

Alabama	7	Missouri	9
Alaska	2	Montana	1
Arizona	2	Nebraska	1
Arkansas	6	New Hampshire	1
California	17	New Jersey	2
Colorado	6	New Mexico	4
Connecticut	11	New York	21
Delaware	3	North Carolina	11
District of Columbia	10	Ohio	12
Florida	36	Oklahoma	6
Georgia	8	Oregon	3
Hawaii	1	Pennsylvania	8
Illinois	16	Rhode Island	1
Indiana	8	South Carolina	3
Iowa	16	Tennessee	24
Kansas	11	Texas	2
Kentucky	3	Utah	1
Louisiana	12	Vermont	2
Maryland	6	Virginia	5
Massachusetts	20	Washington	3
Michigan	11	West Virginia	3
Minnesota	4	Wisconsin	9
Mississippi	6		

SITES' traveling exhibitions also provide the opportunity for people in other countries to learn about American history and culture. During FY 1985, "American Porcelain" traveled in India; "A Cartoon History of United States Foreign Policy, 1776-1976" traveled in Spain; and "Good as Gold: Alternative Materials in American Jewelry" visited Latin America. A total of 22 exhibition bookings were scheduled for travel outside the United States in FY 1985. SITES also cooperated with the Office of Exhibits Central in the staging and safe return to the United States of the exhibition "Treasures from the Smithsonian Institution," after a successful presentation at the Edinburgh International Festival in Scotland.

SITES estimates that 52 new traveling exhibitions will begin their tour during FY 1986 and FY 1987. Major new exhibitions include: "Hollywood: Legend and Reality," celebrating the creative achievement and cultural influence of American movies over the past 70 years; "After the Revolution: Everyday Life in America, 1780-1800," an exhibition adapted from the new permanent exhibition at the National Museum of American History; "Audubon: Science into Art," from the collection of the American Museum of Natural History in New York; "Artificial Reefs" and "Drawn from the Sea: Art in the Service of Ichthyology" from the National Museum of Natural History; "Surrealist Art" from the collections of the Hirshhorn Museum and Sculpture Garden; and "Magnificent Voyagers," developed in conjunction with the National Museum of Natural History/Museum of Man to commemorate the United States Exploring Expedition of 1838-1842 led by Charles Wilkes. In addition, SITES already has initiated development of 23 new exhibitions scheduled to tour in FY 1988 and following years. SITES' exhibitions, which require at least 12 to 18 months to develop and produce, usually average two years on tour.

EXHIBITIONS BEGINNING TOURS, FY 1986 - FY 1987

Traveling exhibitions developed by SITES serve two primary exhibition functions: to bring the collections of the Smithsonian to national and international audiences, and to cooperate with other museums, organizations and collectors to provide the widest range of

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exhibitions available for travel. Therefore, SITES' exhibitions are both produced from Smithsonian sources as well as adapted from other sources. The following list of new exhibitions beginning their tours in FY 1986 and FY 1987 demonstrates the wide range of subject matter covered by SITES' exhibitions:

Based on Smithsonian Sources

FY 1986: "After the Revolution: Everyday Life in America, 1780-1800"; "Carnegie Libraries"; "Comet Quest"; "Drawn From the Sea: Art in the Service of Ichthyology"; "Eleanor Roosevelt: First Person Singular"; and "Surrealist Art from the Hirshhorn."

FY 1987: "Artificial Reefs"; "The Grand Generation"; "Magnificent Voyagers"; and "Portraits in Black."

Based on Other Sources

FY 1986: "American Master Drawings from the Corcoran Gallery of Art"; "Anasazi World"; "The Art of Cameroon" (panel exhibition version); "Audubon: Science into Art"; "Community Industries of the Shakers"; "Contemporary Print Images by Afro-American Artists"; "Dutch Paintings from the National Gallery of Ireland"; "European Illustration 1974-1984"; "French Cinema Posters"; "Haiti: The First Black Republic"; "Hollywood: Legend and Reality"; "Italian Textiles"; "The Laser at 25"; "Leonid Pasternak"; "Mark Twain and Huck Finn: Joy Flags and Milestones"; "The Master Weavers"; "Olga Hirshhorn, Collection II"; "The Paris Style 1900: Art Nouveau Bing"; "Renaissance Master Bronzes from the Kunsthistorisches Museum, Vienna"; "Savory Suppers and Fancy Feasts"; and "Treasures from the Land: New Zealand Craftsmen and Their Native Materials."

FY 1987: "Africa Adorned"; "American Dress-Up"; "Baseball Immortals, 1905-1935: The Photographs of Charles Martin Conlon"; "Childhood in Victorian America"; "Ecuadorian Archeology"; "Endings"; "Estimations"; "Gauguin and His Circle in Brittany: The Prints"; "Irish Decorative Arts"; "The Itinerants"; "Lost Cities, Forgotten Kings: Discovery of the Ancient Civilization of Honduras"; "Martin Luther King"; "Morroccan Jewelry"; "New Horizons"; "Pacific Flyway"; "Pissaro"; "The Promised Land: Five Utopias Compared"; "Site to Sight: Photography in the Service of Anthropology"; "Sound Tracks"; "Swedish Drawings"; and "Vatican Drawings."

Quadrangle-Related Programs - SITES reaches audiences throughout the United States and many foreign countries through its exhibitions, workshops, publications and educational materials. In its new location in the Quadrangle, SITES will, in addition, assume the development of exhibitions and programs that assist in fulfilling the Smithsonian's international mission, thereby reinforcing SITES' specific role in international cultural exchange. The new facilities will include an introductory gallery, educational workshop, exhibition publications reference center, a vault for temporary storage of exhibition objects and materials, and additional meeting rooms.

Introductory Gallery: The Introductory Gallery will provide space where visiting museum colleagues, potential corporate sponsors, exhibitors and lenders will be able to view actual examples of SITES' work, which SITES has no capability of presenting visually in its present location. The Introductory Gallery will present a varied sampling of SITES' materials, including installation of photographs from various exhibitors; educational materials, kits and booklets; video presentations of public service announcements and educational computer software; exhibition catalogues and brochures; posters; extracts from panel exhibitions; and suggested ways to interpret an exhibition that in turn assist museum colleagues to implement certain educational techniques in their own programs.

Educational Workshop: SITES develops and designs the themes and formats of exhibitions by actively involving curators and scholars from a broad spectrum of disciplines.

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As a result, SITES has developed one of the most comprehensive and finest quality museum education programs in the world. This includes educational and experiential exhibitions, such as "What If I Couldn't," designed so that general audiences can learn about the special needs of the handicapped; and "Sculpture: Exploring Three Dimensions," a participatory exhibition that involves visitors with the materials and technical processes necessary to produce sculptures. The new educational workshop area will allow SITES to integrate scholarly research and education in the initial stages of exhibition development. Here, SITES, working in collaboration with specialists, will be able to test and evaluate educational materials designed to accompany traveling exhibitions; hold seminars on exhibition design and content, audience identification and development, and public relations techniques; and assist colleagues in the design of outreach programs directed at their own local schools and communities. Students and educators among others play an important role in assisting SITES' evaluation team to test these museum programs, which are then shared nationally and internationally with museums and museum colleagues.

Exhibition Publications Reference Center: Since its inception, SITES has published hundreds of catalogues, scholarly documents, and enrichment materials to accompany traveling exhibitions. SITES' literary offerings continue to grow rapidly, with over 30 publications issued each year. SITES also accumulates slides and photographs that promote exhibitions and educational product offerings. Exhibition publications are exchanged with museums throughout the United States and abroad. The Exhibition Publications Reference Center will enable SITES to centralize its vast and valuable collection of exhibition literature, and become a repository for all SITES' publications and those of many other traveling exhibition services and museums. These resources will be open to colleagues and the public for reference and research and form a core of information upon which SITES' staff will draw for program decisions.

Exhibitions for the International Gallery - In conjunction with the Directorate of International Activities, SITES will organize the inaugural exhibition for the International Gallery in the Quadrangle (scheduled to open to the public in the spring of 1987). This exhibition, entitled "Generations: Birth Rituals and the Roots of Becoming," will focus on the symbols and mythology associated with the advent of life in many cultures around the world. Development of this exhibition will integrate the disciplines of art, anthropology, and history and draw upon the expertise of many Smithsonian scholars from throughout the Institution, as well as other museums and universities. SITES will continue to work with the Directorate of International Activities on the development of future exhibitions to be presented in the International Gallery.

EXPLANATION OF PROGRAM INCREASE - Quadrangle-related Support (6.75 workyears and $183,000) - For FY 1987, an increase of 2.25 workyears and $54,000 is requested to reinforce SITES' staff support for its expanded program responsibilities in the Quadrangle. A further amount of 4.5 workyears and $129,000 is required to annualize the partial year funding for 6 positions approved in the FY 1986 budget for Quadrangle-related support.

To provide public assistance in the Introductory Gallery and the expanded public service functions required by SITES' location in the Quadrangle, a secretary/receptionist (.75 workyear and $13,000) is requested. Another secretarial position (.5 workyear and $9,000) would provide support for the Educational Workshop, including assistance in the scheduling and promoting of workshop activities. (Funding for the full year costs of these positions is anticipated in the FY 1988 budget request.) A sum of $16,000 also is requested to purchase supplies and materials used in producing Introductory Gallery presentations and to develop educational programming for the Educational Workshop.

A registrarial assistant (1 workyear and $16,000) would allow SITES to maintain its capability to provide prompt and efficient service to exhibitors, expedite booking procedures, verify the accuracy of exhibition contracts, and promote SITES' exhibitions available for booking. The critical need for this position is underscored by the fact

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that the number of institutions served by SITES has grown over the past two years from over 7,000 institutions to more than 9,000 and is expected to increase further as a result of greater visibility in the Quadrangle.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These are derived from participation fees collected from museums, universities, historical societies and other users of the traveling exhibitions. These funds, supplemented by an allotment, support 31 positions and virtually all exhibition development costs including publications, materials, outside specialists and contractual services (estimated expenditures of $1,840,000 in FY 1986 and $2,005,000 in FY 1987). A special purpose fund for the "Treasures of the Smithsonian" exhibition (actual expenditures of $370,000 in FY 1985) accounts for the variance in special purpose totals.

Restricted Funds - Funds are provided in the form of gifts and foundation grants from individuals, organizations or corporations for specific purposes. During FY 1985, several grants were received including funding from Time, Inc. for the exhibition "Hollywood: Legend and Reality"; and from Pepsico-International for the exhibition "American Art 1920-1940."

Major funding is expected to continue during FY 1986 for the development of important exhibitions: from the Optical Society of America and the Lasers and Electro-Optics Society of the Institute of Electrical and Electronics Engineers for the exhibition "The Laser at 25"; "The Paris Style 1900: Art Nouveau Ring"; "Five Centuries of Italian Textiles"; "Lost Cities, Forgotten Kings: Discovering the Ancient Civilization of Honduras"; "Renaissance Master Bronzes"; and "Baseball Immortals, 1905-1935: The Photographs of Charles Martin Conlon."

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SMITHSONIAN INSTITUTION ARCHIVES

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
			General		Special Purpose					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1985 Actual	14	511	5	146	-	1	-	-	-	-
FY 1986 -Base	15	539	6	192	-	-	-	-	-	-
-PL 99-177***		518								
FY 1987 Estimate	15	552	7	229	-	-	-	-	-	-

* FTE = Full-time equivalent
** FTP = Full-time permanent positions
*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	15	-	15
11 Personnel Compensation	402	9	411
12 Personnel Benefits	48	1	49
21 Travel	4	-	4
22 Transportation of Things	1	-	1
24 Printing & Reproduction	3	-	3
25 Other Services	49	2	51
26 Supplies & Materials	18	1	19
31 Equipment	14	-	14
Total	539	13	552

Analysis of Increase

Necessary Pay	10
Inflation	3

ABSTRACT - The Smithsonian Institution Archives is the official archives of the Smithsonian Institution. Its staff appraises, selects, accessions, and administers inactive official records, professional papers of distinguished research staff, and other documentation of lasting historical value on the research, public service, and administrative activities of the Smithsonian in science, technology, history, art, public education and museum operations. These archives serve as the Institutional memory, and they are a vital and valuable source of information not only to the administrators and community of scholars in the Smithsonian itself, but also to the broader community of interested researchers and the general public throughout the country and around the world. The staff of the Archives plans and implements archives and records management programs and projects from a main archives and research facility in the Arts and Industries Building and operates an off-Mall records center for the temporary storage of documentation awaiting appraisal and disposition. No program increase is requested for

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FY 1987. Necessary pay of $10,000 is required for existing staff and an amount of $3,000 is sought to compensate for the effects of inflation in nonsalary areas of expense.

PROGRAM - The archives program has succeeded over the past ten years in establishing control over a substantial amount of the official records and professional documentation that contain the vital history of the Smithsonian Institution. This has been accomplished by careful, labor-intensive examination of files in operating offices, establishment of disposition schedules arranging for inactive records to be sent to the Archives or discarded if lacking substantial historical value, and by personal oral history interviews with key figures in Institutional development. The archives program is an ongoing process, expanding and evolving to contain new documentation that is being generated constantly. This process is complicated by the fact that there are program and administrative changes every year which must be accommodated not only in the records, but in the program focus of the Archives.

The establishment and growth of the archival program since its inception in the 1960s has reflected the rapid and substantial growth and diversification of the Institution over the past several decades. It also has coincided with dramatic changes in information technology for document reproduction, communications, storage and retrieval in both research and institutional management. The Smithsonian Archives has had to grow and diversify, and it must continue to do so if it is to serve as an adequate official archives of the Institution. The Smithsonian Archives is working with the Office of Information Resource Management, the Office of Facilities Services, the Smithsonian Institution Libraries, and with other offices sharing similar needs and problems to seek ways of ensuring adequate active storage for the growing volume of records used regularly by Smithsonian staff and outside researchers, and to accommodate the requirements of electronic information communications, storage and retrieval.

In FY 1978, there were about 6,000 cubic feet of holdings in the Smithsonian Archives. In FY 1985, there were 12,184 cubic feet. Growth over the past decade was exceptional due to the backlogs of records in operating offices and to the addition of new bureaus and offices. This growth in documentation is expected to continue at the rate of about 400-800 cubic feet per year for the indefinite future. The advent of electronic information storage is not expected to alleviate this condition within the next several years, although it may provide some long-term relief. In the short term, the new technology overlaps existing, on-going storage and processing requirements rather than replacing them, and the Archives must accommodate both the old and the new out of existing resources. In addition to an increase in the volume of materials, there has been an increase in diversity of media beyond the traditional and relatively simple requirements of paper records to a variety of photographic and electronic media, each of which requires specialized equipment and specialized expertise to store, preserve, and use the material.

There has been a corresponding increase in research and reference activity and, this too is expected to grow in the future. In FY 1978, there were 857 reference inquiries (in person, by mail and on the phone), and in FY 1985, there were 1,853. Copying documents for researchers tripled from FY 1984 to FY 1985. In FY 1984, there were just under 8,000 pages and in FY 1985, there was a total of 27,742 pages. As the volume and diversity of holdings has grown, as the descriptions of holdings have become known through publication of the award-winning Guide to the Smithsonian Archives (1983) and as the service provided has improved, so the volume and diversity of inquiries, from routine public curiosity to intensive and extensive scholarly research, also have increased. With the entry of descriptive catalogue data into the Smithsonian Institution Bibliographic Information System (SIBIS), a further leap in the volume of reference inquiries is expected over the coming several years.

A very modest microfilming program has been ongoing at the Smithsonian Archives for a number of years to provide security copies of vital records and to provide substitute

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reference images for paper documentation that is rapidly decaying. It is hoped that this program can be supplemented by new technology such as optical scanning and digital storage of imagery. The Archives is cooperating with Smithsonian Institution Libraries and other interested offices to devise the requirements of archives for such technology.

Smithsonian Archives has relieved pressure on the records center space by requesting authorization from originating offices for the early discard of groups of records properly scheduled for such discarding, and some success has been achieved in reducing the temporary holdings scheduled for discard by two or three hundred cubic feet.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These are provided by allotments and are used to cover the salaries, benefits, and various support costs for an archivist and an archives technician (estimated expenditures of $71,000 in FY 1986 and $106,000 in FY 1987). Funding also has been provided for four positions and support costs for a project to survey the photographic collections of the Smithsonian, to enter the collected information into a data base for on-line automated cataloguing, and to produce the Finder's Guide to the Photographic Collections in the Smithsonian Institution (estimated expenditures of $121,000 in FY 1986 and $123,000 in FY 1987).

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NATIONAL MUSEUM ACT

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS: FEDERAL FUNDS FTE*	FEDERAL FUNDS Amount	UNRESTRICTED FUNDS: General FTP**	General Amount	Special Purpose FTP**	Special Purpose Amount	RESTRICTED FUNDS FTP**	RESTRICTED FUNDS Amount	FEDERAL GRANTS & CONTRACTS FTP**	FEDERAL GRANTS & CONTRACTS Amount
FY 1985 Actual	3	733	-	-	-	-	-	-	-	-
FY 1986 -Base	3	772	-	-	-	-	-	-	-	-
-PL 99-177***		739								
FY 1987 Estimate	3	772	-	-	-	-	-	-	-	-

* FTE = Full-time equivalent

** FTP = Full-time permanent positions

*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	3	-	3
11 Personnel Compensation	74	-	74
12 Personnel Benefits	9	-	9
21 Travel	9	-	9
24 Printing & Reproduction	7	-	7
25 Other Services	19	-	19
26 Supplies & Materials	1	-	1
41 Grants	653	-	653
Total	772	0	772

ABSTRACT - The National Museum Act of 1966 (20 U.S.C. 65a), as amended, established a technical assistance program, administered by the Smithsonian, to issue grants for projects enhancing the quality of museum operations throughout the Nation. The National Museum Act (NMA) grants allow the Smithsonian to support professional training in museum activities--including collections management, research and exhibitions, education, public relations, and conservation--and to conduct studies on important museum-related problems. Historically, the grant program has attempted to foster a high standard of professionalism in the museum community and to increase awareness of the critical importance of conservation vis-a-vis the care and preservation of our cultural and national heritage. No program increase is requested for FY 1987.

PROGRAM - National Museum Act grants provide training opportunities for museum professionals; support research that advances knowledge about critical museum-related problems; and encourage activities that make technical information available to the field. Grants are made to museums, professional museum organizations and associations, academic institutions with museum-related programs, and in some instances to individuals applying through an eligible organization.

The Advisory Council, which assists in identifying priorities and evaluating projects for which support is requested, is appointed by the Secretary. It consists of

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museum and conservation professionals in the principal museum disciplines of art, science and history. In evaluating the applications for assistance from NMA, the Advisory Council makes recommendations that are based on the potential benefit of the projects to the museum field, the quality of the proposals and the qualifications of the individuals involved.

From 1972 to 1985, the National Museum Act processed 2,345 applications for grants and made 791 awards, totaling $10 million, of which 394 awards (50 percent) involved conservation training and research. In FY 1985, 185 proposals requesting $3.2 million were submitted and 63 grants were made totaling $656,863. Of these, 40 grants (63 percent) related to conservation. For FY 1986 funds, 182 applications were received requesting $2.8 million. To date, 33 awards have been made in three of the six grant categories, totaling $437,825. Applications in the remaining three categories will be reviewed in February.

Professional Training - In FY 1986, six grants were made to academic institutions offering training programs related to professional museum work. Three of these programs involve conservation training in well-established graduate-level programs. Other grants to academic institutions will support museum studies programs tailored to the needs of future professionals in history and art museums.

Nineteen museums were recipients of internship awards that will enable beginning professionals who have already received academic training to obtain practical experience in museum practices. These awards were distributed to art, history and science museums as well as zoos and herbaria in various regions of the United States. The training at these institutions covers a wide range of museum activities, such as educational programming, curatorial techniques, conservation, methods of interpretation, and registration.

In FY 1985, eleven individuals sponsored by various museum-related institutions received grants under the Stipends to Individuals for Conservation Studies Program to advance their training in conservation. This Program, which was established in 1976 in response to a continuing need for professional conservators in the United States, offers various types of assistance. Some awards involve enrollment in a multiyear formal training program or a short-term specialized course. Others involve an internship of several months duration for conservators already employed by a museum or a nine- to twelve-month internship for recent graduates of a formal conservation training program. Individuals who received awards in 1985 are gaining expertise in many different conservation specialties such as books, paintings, paper objects, and textiles.

In FY 1985 and FY 1986, eighteen seminars for museum professionals were supported in various areas of the country. One pertains to the care and management of photographic collections and another to strategies for preserving tigers in captivity. A museum association in Oklahoma and a regional conservation center in Colorado will be sponsoring conservation-awareness workshops for employees of small and medium-sized museums that have no access to in-house conservation staff.

Research - The National Museum Act has continued to provide support for studies on technical issues that pertain to museums. In recent years, applications submitted to the Act under the Special Studies and Research category have largely related to conservation and have been increasingly technical in nature. Many of them involve research that is contributing to the development of improved techniques for the preservation of objects, specimens, and living animals in zoos and aquaria.

In 1985, ten grants were made on various specialized topics. Two involve environmental or nutrition-related problems associated with maintaining animals in captivity. One involves establishing guidelines on the proper care of objects in historic adobe

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museums and another developing safe techniques for consolidating deteriorating plaster in historic buildings. At an outdoor history museum in Massachusetts, educators will investigate new programs that are specifically geared to adult visitors.

Services to the Field - A portion of the National Museum Act's budget is available each year for projects that provide valuable services to a museum constituency or to museum professionals in general. In 1985, awards were made to two national associations for consultant services that will benefit history museums and museums collecting Afro-American materials. A grant was made to a museum-related organization in New York for a series of data sheets on health hazards in museum conservation, which is an area of increasing concern to conservators, and another to a major art museum in Philadelphia for a publication being distributed to both conservators and the general public on the conservation of outdoor sculptural monuments.

The staffs of the National Museum Act and the Office of the Assistant Secretary for Museum Programs work closely with individuals, museums, educational institutions, and professional organizations involved in museum training and research activities to better coordinate efforts to meet the increasingly complex needs of museums. The Smithsonian also consults regularly with administrators of Federal museum programs such as the National Endowment for the Arts, the National Endowment for the Humanities, the Institute of Museum Services, and the National Science Foundation to insure the effective and efficient utilization of Federal resources in the museum field.

Status of Authorization - Previously available authority expired September 30, 1982. Funding for the National Museum Act activities has been provided in the Interior and Related Agencies appropriation measures for FY 1983 through FY 1986.

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DIRECTORATE OF INTERNATIONAL ACTIVITIES

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
			General		Special Purpose					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1985 Actual	7	272	9	370	-	-	-	-	-	-
FY 1986 -Base	12	527	11	618	-	100	-	210	-	-
-PL 99-177***		441								
FY 1987 Estimate	13	1,027	11	829	-	150	-	327	-	-

* FTE = Full-time equivalent
** FTP = Full-time permanent positions
*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	12	1	13
11 Personnel Compensation	324	38	362
12 Personnel Benefits	39	6	45
21 Travel	16	84	100
22 Transportation of Things	9	-	9
23 Rent, Communications & Utilities	1	-	1
24 Printing & Reproduction	15	12	27
25 Other Services	102	304	406
26 Supplies & Materials	16	12	28
31 Equipment	5	44	49
Total	527	500	1,027

Analysis of Increase

Necessary Pay	3
Inflation	7
Program Funds	490

ABSTRACT - The Directorate of International Activities was established in October 1984 to monitor, coordinate, and enhance the Smithsonian-wide array of work in the international field; to be responsible for liaison with Federal agencies and national and international organizations whose activities relate to those of the Institution; to ensure balanced international program emphases, reflecting all world regions and all fields of existing Smithsonian interests from basic research in the natural sciences to popular culture and the performing arts; to assist in developing comprehensive, long-range program plans that will increase the scope, salience, and effectiveness of all the Institution's international activities; and to plan, design, and conduct the programs of the International Center located in the Quadrangle complex. The work of the Directorate

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is conducted in three divisions: a program staff primarily responsible for planning the programs of the International Center, and for filling the liaison and coordinating roles of the Directorate, and for administering the Special Foreign Currency Program which provides grants to American institutions for research in "excess" foreign currency countries; an Office of Service and Protocol (formerly the Office of International Activities); and an Office of Publications Exchange (formerly the International Exchange Service). The Directorate also has responsibility for the overall planning of the 1992 commemoration of the landing of Columbus in the Americas. (Responsibility for the administration of the Special Foreign Currency Program was transferred from the Office of Fellowships and Grants to the Directorate of International Activities in October 1985. This Program is described in the separate section of this budget request.)

For FY 1987, an increase of $449,000 is requested to support exhibition planning for International Center programs ($141,000); to develop two workshops on tropical biology ($23,000); to provide automation capability for International Center staff and visiting scholars ($40,000); and to initiate preliminary Institution-wide planning for the programs and events to commemorate the Columbus Quincentenary ($245,000). A further amount of 1.5 workyears and $41,000 is required to annualize the partial year funding for 2 positions approved in the FY 1986 budget for Quadrangle-related support. Necessary pay of $3,000 is required for existing staff and an amount of $7,000 is sought to compensate for the effects of inflation in nonsalary areas of expense.

PROGRAM - In October 1984, the Directorate of International Activities was established to give higher visibility both internally and externally to the international programs of the Smithsonian which date from its earliest days and have continued to be integral to its mandate.

The Office of Publications Exchange fosters international scholarly interchange by enabling universities and learned societies in the United States to exchange their publications with those of corresponding institutions and governments of other countries. In recent years, more than 200 American universities, libraries and other organizations have participated in this international publications exchange. During FY 1985, more than 85,000 volumes were exchanged. In FY 1986, it is expected that this level of service will be maintained.

The Office of Service and Protocol provides the basic services necessary to coordinate the international aspects of Smithsonian research and museum programs, such as obtaining passports and visas for Smithsonian travelers; facilitating communications and logistical arrangements for research and participation in meetings abroad; assisting in the drafting and implementing of agreements relating to international cooperative programs; providing assistance to foreign dignitaries and scholars who participate in Smithsonian programs in the United States; and compiling and updating annually the "Summary Profile of International Activities."

The most recent "Profile" reveals that over the past five years the Smithsonian has conducted over 850 projects in more than 120 countries, reflecting the inherently international character of Smithsonian activities. This wide range of continuing Smithsonian international programs, conducted in large measure in the developing regions of the world, forms the basis for strengthening the Smithsonian's role in international sciences and provides the core subject matter for programs of the International Center in the Quadrangle complex. While the program focus of the National Museum of African Art and the Center for Asian Art will be concerned with the ancient, diverse and complex cultures that extend from the west coast of Africa to the South Pacific, the International Center will not only complement the area interests of these museums, but also focus much attention on Latin America, thereby enabling the Smithsonian for the first time to cover all of the developing world with programs ranging from the scientific and technical to the cultural and artistic. The objective will be to provide all levels of the public with

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carefully researched insights into this broad expanse of ancient cultures in new nations, now insufficiently known in the United States.

To transmit to the public, rapidly and comprehensibly, the results of new scientific research and to reinforce and extend the international cooperation essential to the scientific enterprise are the principal thrusts of the Directorate's program activities in FY 1986 and will continue to be in FY 1987.

Reflecting these major purposes, the programs in the International Center will include exhibitions, conferences, colloquia, performances, film showings, lecture-discussion meetings, seminars, symposia and intensive workshops. They will be integrated and thematically planned to promote greater cultural and scientific understanding about peoples and regions of the world and will not be bound within national borders; cultures and natural systems rather than political entities will inspire the programs of the Center.

With initial planning funds provided in the FY 1986 Federal budget and production funding anticipated to be provided by unrestricted Trust funds, the inaugural exhibition and associated programs in FY 1987 will focus on "Generations: Birth Rituals and the Roots of Becoming," an ambitious and unprecedented multi-disciplinary, multi-cultural investigation of the art and rituals associated with birth from ancient times to the present. It will link in a new way the Smithsonian's scholarly resources and collections in its many divisions of arts and humanities, and social and natural sciences, to explore the richness and diversity of cultures worldwide as they celebrate this milestone of the human experience. Of particular importance will be the interpretation of non-Western materials in context, through concentration on the ways certain cultures view this subject, how they incorporate it in their world view, how they deal with its reality as well as its symbolism, and how they express these ideas and concepts in material form.

For several reasons, the exhibition is judged to be an ideal inaugural show: its theme of creation provides a reason to celebrate and parallels the birth of a gallery and the birth of a program; it incorporates a strong didactic component in the context of an aesthetic and scientific presentation; it allows the inclusion of many cultures and complements the presentations of the two Quadrangle museums; it results from new scholarship; it creates a bridge of understanding between the cultures exhibited and the experiences of the viewers; and it allows a cross-disciplinary approach grounded in Smithsonian expertise combining art, history and anthropology.

In FY 1987, planning will begin for the second major exhibition in the International Center Gallery, "Tropical Forests: A Disappearing Treasure," scheduled for a spring 1988 opening. This show gives the Smithsonian a special opportunity to present the results of its scientific work through an exhibition and related programs focusing public attention on the destruction of the world's tropical forests, the Earth's most biologically diverse habitat. The tropical forests are being destroyed at a phenomenal rate; each year an area of tropical forest the size of the state of Delaware is denuded, its richness never to be regenerated.

Deforestation of the tropics is an exceedingly complex ecological, social and economic problem of our times. This destructive trend points the way to massive environmental changes, including the impoverishment of living places for man and of habitats for animal species, the loss of resources for subsistence and development, and the onset of major climatological changes. The exhibition will take a cross-disciplinary approach and will draw extensively upon the Smithsonian scientists at the Tropical Research Institute, the Museum of Natural History and the National Zoo. The goals for this exhibition are not to suggest solutions, but to present continuing programs, in research, conservation and sustainable use, and to alert the public to the necessity to maintain the tropical forests.

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Also in FY 1986, the Directorate, in cooperation with the National Academy of Sciences will sponsor a Forum on Biologic Diversity. The Forum will bring together distinguished biologists, economists, historians, policy makers and multinational developers to address a general public audience on the current threats to global biologic diversity. Following a Washington, D.C. presentation, the Forum will travel to locations throughout the United States.

Pursuing the same FY 1986 objective, the Directorate will undertake a pilot three-year program in cooperation with the National Museum of Natural History and the International Man and the Biosphere Program. Initially, the goal is the design of a practical, standardized methodology for collecting and managing biotic inventory and other biological data in all Biosphere Reserves, potential Reserves and other endangered habitats. (A Biosphere Reserve is an area selected for protection and study because it is a representative example of one of the world's major ecosystems.) With such a methodology, comparative work can proceed more efficiently and accelerate the pace of understanding the scope and scale of biological diversity in the world.

Special International Programs - During the next six years, the attention of the Smithsonian and, indeed, the nation will become increasingly focused on the commemoration of the 500th anniversary of the landing of Christopher Columbus in the Americas. For the Smithsonian Institution, this occasion offers and opportunity to take a closer look at the past, present and future implications of the 1492 voyager. The Directorate of International Activities, having overall fiscal and programmatic responsibility for the Institution-wide Quincentenary commemoration, has spent the past year defining its thematic and programmatic approach through a series of conferences with scholars from North and South America and in consultation with the various units within the Smithsonian. This phase of conceptual planning, supported by unrestricted Trust funds, has led to the adoption of an Institutional theme entitled, "Quincentenary: The Americas 1492-1992--Exploration of the Past - Encounter with the Present - Discovery of the Future." In FY 1987, program planning will be initiated by nine bureaus and offices in areas ranging from exhibition conceptualization to publication.

EXPLANATION OF PROGRAM INCREASE:

Quadrangle-related Programs (1.5 workyears and $245,000) - For FY 1987, an increase of $204,000 is requested to support exhibition planning for International Center programs ($141,000); to develop two workshops on tropical biology ($23,000); and to provide automation capability for International Center staff and visiting scholars ($40,000). A further amount of 1.5 workyears and $41,000 is required to annualize the partial year funding for 2 positions approved in the FY 1986 budget for Quadrangle-related support.

— Exhibition Planning ($141,000): The second major exhibition in the International Center Gallery, entitled "Tropical Forests: A Disappearing Treasure," is scheduled to open in the spring of 1988. As described earlier, this biologically diverse habitat is disappearing at an alarming rate. The Directorate of International Activities and the Smithsonian Institution Traveling Exhibition Service, together with the World Wildlife Fund, and working with scientists at the National Museum of Natural History, the National Zoological Park and the Smithsonian Tropical Research Institute, will combine efforts and resources to describe this global crisis. The sponsors of the exhibition will focus public attention on the crucial problem of the tropical forest - its ecology, its diversity, the threat to its existence and the efforts being made to preserve it and to utilize it in a more environmentally and economically intelligent way. During the exhibition period, the International Center will present supplemental programs consisting of symposia, lectures, films and other activities relevant to the subject.

In FY 1987, a total of $141,000 is sought to meet exhibition planning and design costs. The costs would include travel for an exhibition curator to tropical forests

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research sites in Central and South America, Africa and Indonesia ($15,000); services of a film-maker to record crucial sequences for the audio-visual portions of the exhibition and to edit existing footage for exhibition purposes ($58,000); research and writing for catalogue articles ($30,000); preliminary conceptual exhibition design ($20,000); and other curatorial support ($18,000).

-- Tropical Biology Workshop Development ($23,000): The requested increase of $23,000 for tropical biology workshop development will permit the planning of two short courses in tropical biology, beginning in FY 1988. The Institution has significant and wide-ranging interests in Latin America which are divided among various bureaus and programs. The Directorate represents the Institution's commitment to focus attention on the cultures and scientific endeavors of Latin American countries and to expand professional and scholarly collaboration. Latin America will be central to the planning for Quincentennial programs and to the development of an exploration of problems in the world's tropical forests. In recognition of these points, the Directorate proposes to begin a variety of programs based upon its Latin American interests and that also contribute to the exchange of ideas and information on subjects reflecting Smithsonian expertise.

As a part of this effort, the Directorate plans a series of intensive short courses developed and offered by senior Smithsonian staff, to be presented in the International Center and other Smithsonian facilities for selected students and professionals from Latin America. We anticipate beginning with a course in the latest methodologies and research results in tropical biology, followed by one focusing on a specific aspect of tropical biology.

The requested increase of $23,000 will enable the Directorate to plan the workshop series, develop the syllabus and curriculum, and produce course material. In FY 1988 and following years, it is anticipated that funds will be needed to meet the expenses associated with actually conducting the courses. It should be noted that the Directorate will seek Institution Trust funds in FY 1987 to provide travel and stipends for the participants.

-- Automation and Research Support ($40,000): A sum of $40,000 is requested to provide automation capability for the research, exhibition, and information management requirements of International Center staff and visiting scholars. Of this amount, a sum of $20,000 (originally requested in FY 1986) will permit the purchase of office automation equipment necessary for information management systems and other basic office equipment and supplies for the staff of the International Center. The application of automation will be especially critical in coordinating the scheduling and logistical planning of exhibitions and other International Center programs and in tracking the progress of specific tasks and project management goals.

A further sum of $20,000 is requested to provide automation and research support for the Visiting Scholars Program at the International Center, established to enhance the international scientific community's access to Smithsonian Institution research resources. It will be necessary to provide these scholars with the tools to make use of various Institutional information sources, the majority of which are either presently, or contemplated to be, available via computer. It is essential that the International Center scholar facilities be equipped with Institutionally compatible automated word processing and computer systems which have the capability to be linked with appropriate local area networks as they develop throughout the Institution. The requested increase will allow the purchase of four computers, printers and peripheral equipment, software, central computer usage, and equipment maintenance. In FY 1988 and following years, this base will be used to provide for maintenance, periodic replacement of the equipment and upgrading of the software.

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Columbus Quincentenary ($245,000): Public Law 98-375 established the Christopher Columbus Quincentenary Jubilee Commission, declaring that "...as the Nation approaches the Quincentennial of the voyages of discovery of Christopher Columbus, it is appropriate to celebrate and commemorate this anniversary...." The Directorate of International Activities will coordinate the Smithsonian-wide planning and development of the wide range of public and scholarly programs and activities that the different bureaus of the Institution will undertake to commemorate the anniversary. The Quincentenary commemoration will provide an opportunity and a challenge. It will be an opportunity to encourage public and scholarly consideration of the significance of Columbus' voyage and to promote better understanding of the Americas as a geographic entity with shared historical roots and concerns for future life in this hemisphere. The Quincentenary will challenge the Institution to take its present research in Latin America and North America in new directions in order to develop a range of programs that synthesize disciplinary perspectives.

Over the past year there has been a concerted effort to identify, within the broad thematic approach, appropriate exhibitions and program ideas which will effectively and accurately present the 1492 encounter in the Americas. As these concepts crystalized, it became clear that there is an Institutional need to strengthen the expertise related to the investigations and explications of a variety of North American and Latin American topics identified by the bureaus. Therefore, to assist the Institution in the realization and implementation of Quincentennial exhibitions and programs, in FY 1987 an increase of $245,000 is requested. The Quincentenary programs outlined below, although incipient in development, indicate the early planning of nine Smithsonian units involved in meeting the Smithsonian's two-fold objective: the presentation of a complex of thematically integrated programs for the Quincentennial observance itself, and the formation of a solid base of knowledge for the future in order that the commemoration will have a public and scholarly impact beyond the 1992 anniversary.

Bureau	Request	Purpose
National Museum of American History	$90,000	Exhibition Planning
National Museum of Natural History	40,000	Program Coordination
National Museum of Natural History/ Museum of Man	10,000	Contemporary Folk Literature Archive
Office of Folklife Programs	15,000	Latin American Folklife Festival Planning
National Portrait Gallery	13,000	Exhibition Planning
Hirshhorn Museum and Sculpture Garden	10,000	Exhibition Planning
National Air and Space Museum	17,000	Atlas of the Earth
Smithsonian Institution Press	5,000	Publication Production
Directorate of International Activities	30,000	Seminars, Conferences and Publications
Directorate of International Activities	15,000	Exhibition Planning
Total	$245,000	

* The National Museum of American History will engage specialists and begin research for a major exhibition focusing upon five centuries of interaction among Native Americans and Europeans in North America with special attention paid to the Spanish influence from the earliest colonial days.

* Program planning by the National Museum of Natural History will focus on one of the most dramatic and pervasive developments arising from the encounter of the old and

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new Worlds, the massive alterations of the landscape of flora and fauna, and the attendant environmental changes still prevalent today. The Museum's rich New World collections provide an exceptional base for such a presentation. In order to develop an interdisciplinary program, support is sought for program coordination and consultation with non-Smithsonian scholars.

* The National Museum of Natural History also plans departmental efforts, including a tape archive and publication program of contemporary indigenous folk literature of peoples of the Americas, showing both survival and change in orally transmitted tradition. The project requires funding for Spanish language specialists, travel and equipment.

* Contemporary cultural diversity in the Americas will be the theme for the Folklife Festivals and publications from 1989 through 1992 focusing on the Caribbean and on Latin America. In FY 1987, the Office of Folklife Programs will initiate consultation meetings with scholars from Latin America and begin preliminary planning for the festival series.

* The National Portrait Gallery, plans an exhibition on Spanish portrait, masterpieces, which requires the service of an expert in Spanish art history to prepare a preliminary plan, to locate and inspect appropriate works for inclusion and to begin negotiations with lenders.

* Contemporary visual art in Latin America will be the exhibition topic of the Hirshhorn Museum and Sculpture Garden. This art reflects not only the traditions of the past but the social, political and artistic issues of present-day Latin America. In order to define the type and nature of the exhibition, two study trips are planned to visit centers of art in Peru, Venezuela and Mexico; and Argentina, Uruguay and Brazil.

* The science of map making benefited greatly from the discoveries that Columbus and other explorers made in the New World. Today the advances in technology continue this search to complete knowledge of the geographic world. The National Air and Space Museum proposes to produce an Earth Atlas using remotely sensed images (Landsat satellite photos). Although previous publications of this kind have treated only selected geographic areas, this proposed atlas would include all world areas. Support is requested to perform background research and provide liaison with other agencies.

* The Smithsonian Institution Press will publish a major volume, written by a noted archaeologist on one of the least studied periods of United States history, the Spanish colonial past. In opening up this long-neglected and important subject, this publication will pave the way for the substantial attention that will be devoted in the 1992 observance to early Spanish settlement in North America.

* The Directorate of International Activities will sponsor several seminars and a conference, all examining current research on the cultures of the New World and of Europe before and after the discovery. A new Smithsonian series Quincentenary Papers will publish the proceedings. The Directorate also will sponsor scholarly meetings to plan three interrelated exhibitions in the International Center scheduled for 1990, 1991 and 1992.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These funds are provided by allotments which support 11 positions and costs associated with the planning and development of research and exhibition programs for the International Center and the Quincentenary commemoration (estimated expenditures of $618,000 in FY 1986 and $829,000 in FY 1987). A

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special purpose fund will provide stipend support for Third World researchers to participate in Smithsonian-sponsored training courses and workshops (estimated expenditures of $100,000 in FY 1986 and $150,000 in FY 1987).

Restricted Funds - These funds are provided from gifts, grants and other donations from individuals, foundations, organizations or corporations for specific purposes, such as mounting exhibitions and staging performances, film showings, and other public presentations in the International Center (estimated expenditures of $210,000 in FY 1986 and $327,000 in FY 1987).

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AMERICAN STUDIES AND FOLKLIFE PROGRAMS

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
			General		Special Purpose					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1985 Actual	9	698	13	514	-	503	-	320	-	43
FY 1986 -Base	8	711	13	642	-	40	-	379	-	592
-PL 99-177***		681								
FY 1987 Estimate	8	735	13	655	-	40	-	214	-	852

* FTE = Full-time equivalent

** FTP = Full-time permanent positions

*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	8	0	8
11 Personnal Compensation	341	10	351
12 Personnel Benefits	41	1	42
21 Travel	10	-	10
22 Transportation of Things	5	-	5
23 Rent, Communications & Utilities	16	1	17
24 Printing & Reproduction	51	2	53
25 Other Services	176	7	183
26 Supplies & Materials	51	2	53
31 Equipment	20	1	21
Total	711	24	735

Analysis of Increase

Necessary Pay	11
Inflation	13

ABSTRACT - The Office of American Studies and the Office of Folklife Programs are engaged in the study of various aspects of American civilization. The Office of American Studies is active in researching and promoting academic pursuits in the study of material aspects of American society, while the Office of Folklife Programs concentrates on the study and presentation of folk cultures found in the United States. Incidental to the study and presentation of American folkways is a great interest in and exploration of the folklife traditions of other lands. An important activity of the Office of Folklife Programs is the staging of the Festival of American Folklife, which is the largest annual cultural event in the Nation's Capital. No program increase is requested for FY 1987. Necessary pay of $11,000 is required for existing staff and an amount of $13,000 is sought to compensate for the effects of inflation in nonsalary areas of expense.

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PROGRAM - I. The Office of American Studies: With base resources of 2 workyears and $100,000, the Office of American Studies sponsors a graduate program in American material culture in cooperation with various universities located in Washington, D.C., and elsewhere. The Office offers three or four seminars a year for academic credit. These courses are taught by the director of the program and by cooperating scholars.

The graduate program in American material culture provides a means for scholars and students to pursue American studies through utilization of the unique resources of personnel, objects, and archival material available in the various bureaus of the Smithsonian. This program provides opportunities for graduate students in the American studies or American history departments of affiliated universities to undertake a program of formal course work at the Institution. In addition, a number of research grants and fellowships are awarded each year to support specific interdisciplinary research projects in areas of American studies relevant to the interests and resources of the Smithsonian.

II. The Office of Folklife Programs: With base resources of 6 workyears and $611,000, the Office of Folklife Programs studies the rich variety of folk traditions found throughout the United States and the world. The Office advocates a long-term commitment to the preservation and revitalization of folk cultures which are endangered by the encroachment of modern technological society. To this end, the Office engages in scholarly research to identify and understand folk cultures; presents various aspects of these folk cultures to general and scholarly audiences; collaborates with Smithsonian bureaus in the production of folklife exhibitions; and works closely with government agencies on the development of programs to advance the Nation's interest in America's folklife heritage.

Exhibitions - The Office of Folklife Programs is responsible for fundraising, researching, planning, producing, and presenting the annual Festival of American Folklife. This event has developed a large and loyal constituency throughout the Nation and has stimulated interest in the traditional arts of the regions from which the folk artists at the Festival have come. Such interest has fostered research projects, local festivals modeled after the Smithsonian's Festival, and regional opportunities for traditional craftsworkers and performing artists.

In FY 1985, as part of the nationwide Festival of India, an exhibition entitled, "Aditi: A Celebration of Life" was mounted in the Evans Gallery in the National Museum of Natural History. Focusing on Indian ideas of the stages and transitions within the human life cycle, the exhibition featured 1,500 objects of folk art from the many cultures of India and demonstrations by Indian artists and artisans. The Office of Folklife Programs researched, designed and produced the living component of the exhibition. The Office also cooperated with the staffs of the National Museum of Natural History and the Smithsonian Institution Press in researching and designing the entire exhibition, and in editing and designing the exhibition catalogue.

A major Indian component of the FY 1985 Festival of American Folklife consisted of a re-created mela, or holy day fair, replete with bamboo, ceramic tile and woven palm frond bazaar stalls; a wide range of wares traditionally sold at melas; Indian food; and over 70 Indian and Indian-American performers and craftspeople. The mela, which was conceived to complement the "Aditi" exhibition at the National Museum of Natural History in which performers enhanced the meaning of museum artifacts by providing living, contemporary contexts for them, created authentic contexts for the lively performers. The efforts of the Office of Folklife Programs were supplemented by those of these Learning Center of the National Museum of Natural History which presented photographic and textual information on a wide range of topics, including the major religions and cultures of India.

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The State of Louisiana was also featured at the FY 1985 Festival with vibrant musical performances and selected crafts and ceremonial traditions. Cosponsored by the Department of Culture, Recreation and Tourism and by the Louisiana Heritage Society, the program represented the cultures of the citizens of Louisiana, including Afro-Americans, Anglo-Americans, Cajuns and other French-speaking groups, Italian-Americans, Native Americans and Spanish-Americans.

In addition, the Festival explored the area of "Cultural Conservation." Performances, demonstrations, discussion sessions and activities at the Learning Center evoked the vitality of traditional cultures, the threats to their survival, and the efforts being made to assist the healthy development and preservation of the cultural integrity of traditional cultures. Other programs at the Festival consisted of demonstrations and discussions of traditional foodways and audience-participatory dance parties, which featured three traditional dance musics--polka, Afro-American blues and Cajun.

Planning is under way for the 20th Festival of American Folklife in 1986. Programs will include the folk cultures of Tennessee and Japan, the occupational folklife of American trial lawyers, a program on cultural conservation, and a 20th-anniversary program honoring outstanding performers who have contributed to this event through the years.

Publications - The staff of the Office of Folklife Programs is involved in a broad range of publication projects that analyze and document folklife traditions. The Smithsonian Folklife Studies Series documents folkways still within memory in a variety of traditional cultures. This innovative Series couples book-length monographs and films to ocument and analyze particular traditions more fully than would be possible with the single use of either medium. This hybrid format has proved a useful and important tool for the study of cultural processes. Recent publications in this Series have included The Ojibwa Dance Drum: Its History and Construction, a monograph written to accompany the film The Drummaker; At Laskiainen, In Palo Everyone is a Finn, a film documenting a Finnish-American mid-winter festival; and The District of Columbia Fire Fighters' Pro ect: A Case Study in Occupational Folklife, a monograph which will accompany a film on the occupational traditions of District of Columbia firefighters.

In addition to the Series, the staff produces scholarly monographs and films on aspects of traditional cultures. Recent titles have included Raised in Clay: The Southern Pottery Tradition, a monograph tracing the development of 35 traditional southern potteries (published by the Smithsonian Institution Press for the Office of Folklife Programs); The Stone Carvers, an Oscar winning film about the traditional craft of stone carving as practiced by the carvers at the Washington Cathedral; Aditi: The Living Arts of India, a catalogue published by the Smithsonian Institution Press to accompany the exhibition "Aditi: A Celebration of Life"; Celebrations, a film with Victor Turner, who was guest curator of the Office of Folklife Programs' exhibition at the Renwick Gallery, "Celebrations: A World of Art and Ritual"; Bumba-Meu-Boi: A Brazilian Folk Drama, a monograph about this traditional Brazilian performance.

Archives and Education - The archives of the Office of Folklife Programs is a repository of folkloristic materials which have been generated by Office activities. These materials include recordings of Festival performances; fieldwork interviews stemming from research done in preparation of the annual Festival; and documentation of other office-sponsored publications and events, such as the film-monograph series projects and the Franklin Delano Roosevelt Centennial concert. The archives include 9,000 reels of audio tape; 2,500 audiocassettes; 4,700 rolls of black and white film; 20,000 color slides; 500,000 feet of motion picture film; 850 videotape recordings; and 220 cubic feet of files.

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Inquiries are addressed regularly to the staff of the archives by scholars and others engaged in research on traditional cultures. The archives is also a resource for visiting fellows who, since 1976, have utilized the resources of the Folklife Programs archives to pursue various year-long research projects. Subjects of research have included Coal Miners and the Coal Industry, 1930-1960; Institutional Intervention in Traditional Liturgical Music; Occupational Folklife of Firefighting; Pre-Bluegrass Banjo-picking Styles; and The Use of the Harmonica in American Traditional Music.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestr'-ted General and Special Purpose Funds - I. Office of American Studies: Tuition reimbursement is received from the cooperating universities, principally the George Washington University and the University of Maryland, whose graduate students avail themselves of the courses offered by the Office of American Studies. The tuition reimbursement program is designed to reimburse the Institution for the use of its facilities by the students participating in Smithsonian classes and using these funds to provide honoraria and reimbursement for the services of outside experts participating in the program (estimated expenditures of $14,000 in FY 1986 and in FY 1987).

II. Office of Folklife Programs: Funds are provided by allotments and from concessions sales relating to the Festival of American Folklife (gross sales are normally $30,000 to $40,000). They support 13 full-time employees as well as related costs (estimated expenditures of $642,000 in FY 1986 and $655,000 in FY 1987). The reduction of $463,000 in Special Purpose fund expenditures between FY 1985 and FY 1986 mainly results from the one-time costs of the "Aditi: A Celebration of Life" exhibition.

Restricted Funds - Funds are provided in the form of individual gifts and grants from private foundations or corporations and are used to fund specific programs at the Festival of American Folklife (estimated expenditures of $379,000 in FY 1986 and $214,000 in FY 1987).

Federal Grants and Contracts - These are provided by various foreign, state and local governments for support of performances and programs at the annual Festival of American Folklife. In FY 1985, funds were received to support the costs of highlighting the folklife traditions of Louisiana. Additional grants are anticipated in future years for the Festival (estimated expenditures of $592,000 in FY 1986 and $852,000 in FY 1987).

Planning is under way for the 20th Festival of American Folklife in 1986. Programs will include the folk cultures of Tennessee and Japan, the occupational folklife of American trial lawyers, a program on Cultural Conservation, and a 20th anniversary program honoring outstanding performers who have contributed to this event through the years.

Publications - The staff of the Office of Folklife Programs is involved in a broad range of publication projects that analyze and document folklife traditions. The Smithsonian Folklife Studies Series documents folkways still within memory in a variety of traditional cultures. This innovative Series couples book-length monographs and films to document and analyze particular traditions more fully than would be possible with the single use of either medium. This hybrid format has proved a useful and important tool for the study of cultural processes. Recent publications in this Series have included: The Ojibwa Dance Drum: Its History and Construction, a monograph written to accompany the film The Drummaker; At Laskiainen, In Palo Everyone is a Finn, a film documenting a Finnish-American mid-winter festival; and The District of Columbia Fire Fighters' Project: A Case Study in Occupational Folklife, a monograph which will accompany a film on the occupational traditions of District of Columbia firefighters.

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INTERNATIONAL ENVIRONMENTAL SCIENCE PROGRAM

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
			General		Special Purpose					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1985 Actual	11	680	-	-	-	-	-	-	-	-
FY 1986 -Base	13	728	-	-	-	-	-	-	-	-
-PL 99-177***		697								
FY 1987 Estimate	13	752	-	-	-	-	-	-	-	-

* FTE = Full-time equivalent

** FTP = Full-time permanent positions

*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	13	0	13
11 Personnel Compensation	213	3	216
12 Personnel Benefits	26	1	27
21 Travel	96	4	100
22 Transportation of Things	4	-	4
24 Printing & Reproduction	3	-	3
25 Other Services	265	11	276
26 Supplies & Materials	70	3	73
31 Equipment	51	2	53
Total	728	24	752

Analysis of Increase

Necessary Pay	4
Inflation	20

ABSTRACT - The International Environmental Science Program (IESP) coordinates the Institution's long-term monitoring and study of unique and significant ecosystems. Its goal is to evaluate and eventually predict the impact of human activities and natural change on selected ecosystems. The Program is a multibureau, interdisciplinary effort. Research occurs at two permanent Smithsonian sites--the Tropical Research Institute in Panama and the Environmental Research Center in Maryland--as well as temporary sites throughout the world. No program increase is requested for FY 1987. Necessary pay of $4,000 is required for existing staff and an amount of $20,000 is sought to compensate for the effects of inflation in nonsalary areas of expense.

PROGRAM - The Smithsonian's long tradition in international research and its unparalleled collections of natural history objects qualify it to sustain scientific activities abroad. The IESP provides funds for teams of scientists to monitor natural

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variations in unstressed specific environments. A 1984 report from the Office of Technology Assessment reemphasized the need: 1) to expand existing long-term monitoring programs; 2) to maintain ecosystems; and 3) to develop ways to ensure the survival of rapidly diminishing tropical forests. A 1985 report by the Agency for International Development called for the expansion of monitoring to help promote biological diversity, as being of strategic value to the United States.

The Rhode River Estuary near Edgewater, Maryland, the tropical lowland forest of Barro Colorado Island, and the Galeta Reef on the Atlantic side of the Panama Canal are the program's permanent research sites. For over ten years, scientists have developed a data base on the biological, physical and chemical components to these ecosystems. Analyses of these data have produced concepts and verifiable hypotheses on the long-term patterns in climate, and the stresses and disturbances resulting from human activity.

- Long-term studies on the primary productivity and floristic composition of abandoned fields at the Edgewater site show a 60% increase in biomass productivity, and that the suit of dominant plant species has entirely changed over the first three complete growing seasons of the study. These results are important in developing habitat restoration strategies on areas once actively utilized for agriculture.

- Monitoring sea urchin populations (Diadema) in Panama has provided essential baseline data for analysis of an epidemic that decimated Diadema populations throughout the Caribbean.

- Monitoring has also demonstrated a slow rise in sea level with substantial impact on the biota of the Atlantic Coast of Panama.

- Terrestrial research in Panama produced a soil map for Barro Colorado Island. During the very dry El Niño year of 1983, many populations of plants and animals were affected. However, detailed studies of squirrels and other non-flying mammals supported by the program showed that the El Niño dry season had little effect on their populations. Two major publications derive directly from these efforts.

- Outbreaks of defoliating insects are well known in the temperate zone (e.g., spruce budworms) but are virtually unknown in the tropics, perhaps because host-plants are so widely separated in tropical forests. However, on Barro Colorado Island, caterpillars recently attacked and defoliated the canopy tree Quararibea asterolepis. None of the other 350 species of shrubs and trees on the island were affected. Since the phenology of Quararibea has been monitored since 1979, several important questions about epidemic level outbreaks in tropical forests can be answered.

At IESP's nonpermanent sites in Aldabra, Nepal, Venezuela, Brazil and Peru, scientists with support from the host governments, are continuing their efforts to gather descriptive data that will aid in the development of verifiable hypotheses concerning genetic diversity, animal management, and natural area management. Recent accomplishments at nonpermanent sites for FY 1985 are listed below.

Aldabra - A five-week visit by an interdisciplinary team in the spring of 1985 continued their survey of benthic communities of seagrass beds on the reef flat. The quantitative sampling for this long-term project will continue for two years before analysis of the data will be attempted. Forty-six transect stations were surveyed for marine algae. Between 150 and 200 species were collected, among which were several new records. Bio-assays of about 150 algal species were done to identify the presence of unusual

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natural products with a potential for therapeutic usage. A tortoise population census was carried out for comparison with surveys done in 1968-69. An unexplained adult male mortality rate was observed, and 20 specimens were retained for further study at the National Museum of Natural History.

Nepal - The Great one-horned Asian rhinoceros was studied in FY 1985 when it was discovered that these endangered pachyderms catalyze riverine forest succession on the vast grassland flood plains of Royal Chitwan National Park. Latrines used by rhinos serve as seed beds for favored forage species such as the tree Trewia nudiflora which rapidly colonize grasslands. Experimental studies reveal that seeds digested by rhinos germinate and grow faster than undigested seeds. Six rhinoceros were radio-collared to delineate use of space and ranging patterns. Scholars from Tribhuvan University undertook studies of rhino feeding habits. Vegetation mapping was instituted to track successional changes associated with human activity and flooding, and plans were developed for exclosure studies to investigate the impact of mammalian herbivory on vegetative change in grassland and riverine forest. Plans for reintroducing rhinoceros to the Bardia Reserve in the western terai were also developed. Initial transfers of Chitwan caught animals will take place in FY 1986. A parallel investigation on fire ecology of grassland funded by USAID began in March 1985 and is an important collaborative element of the entire program.

Brazil/Peru-Amazonia - Fieldwork in Amazonia was done in archeology, botany, entomology, herpetology and ichthyology. Results of these investigations added important new information on the composition and distribution of the Neotropical biota. These data are important for completion of several important publications and conservation planning. Specific highlights during this year include production of a checklist of the freshwater fishes of Peru by a National Museum of Natural History ichthyologist and a Peruvian collaborator. This checklist fills a critical need for Neotropical ichthyologists. A fish collecting expedition in coastal Brazil clearly documented for the first time the negative effects of deforestation on the native freshwater fishes. Although some impact was expected due to deforestation, the degree of devastation of the fish fauna was unexpected.

Brazil (Golden Lion Tamarin Project) - During FY 1985, success was achieved in efforts to repatriate the highly endangered primate, the golden lion tamarin, to its native habitat in Brazil. Between May and July 1984, 13 captive-born tamarins were released into the forests of the Poco das Antas Reserve in Brazil. Two females subsequently gave birth and two infants now survive that have been born in the wild to captive-born parents. Efforts will continue to observe, capture and track via radiotelemetry wild groups of tamarins in the Poco das Antas Reserve to improve understanding of their habits in the wild. Also, threatened fauna from outside the Reserve have been translocated successfully to within the Reserve. A corollary education effort is also successfully underway with local inhabitants surrounding the Reserve. During FY 1985, additional tamarins were released in Brazil within protected forests.

Venezuela - Research in FY 1985 continued on the long-term investigation of the important red howler monkey. Efforts to understand the population size, foraging strategies, and diet of these primates continued. The results of these research efforts will be of importance to zoos in properly maintaining the animals in captivity. Research on insect populations began with a selection of insects which are chosen for food by vertebrate populations. This research is important to understand the nutritional requirements of insectivores and to properly control diets in zoo settings. Ornithological research on the Venezuelan snail kite was initiated in order to compare its unique mating system to that of its close biological kin, the endangered Florida snail kite. The results of this research will be of significant use in the management of endangered species.

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Evaluation of Program - IESP is involved in an ongoing process of evaluation to ensure the quality of the research. The IESP programs regularly are subject to peer reviews. In June 1984, there were site visits to Panama and Edgewater by an external panel to review and evaluate the programs there. The reviewers' recommendations were incorporated into planning future research at Panama and Edgewater. In FY 1986, an external panel will review the Venezuela program.

Over the next five years, it is anticipated that work will continue at all program sites. Selected new initiatives will be undertaken in the future to improve the Institution's capabilities in monitoring additional subtropical and tropical sites. The loss of habitat in these areas makes it essential that scientific data now be gathered on areas that may disappear and that plans be developed to conserve other areas before they are lost.

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ACADEMIC AND EDUCATIONAL PROGRAMS

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
			General		Special Purpose					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1985 Actual	20	705	8	370	-	1,331	-	82	-	-
FY 1986 -Base	19	701	9	443	-	1,876	-	254	-	-
-PL 99-177***		738								
FY 1987 Estimate	19	828	9	539	-	2,192	-	196	-	-

* FTE = Full-time equivalent
** FTP = Full-time permanent positions
*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	19	-	19
11 Personnel Compensation	512	9	521
12 Personnel Benefits	65	2	67
21 Travel	16	30	46
23 Rent, Communications & Utilities	4	-	4
24 Printing & Reproduction	48	18	66
25 Other Services	38	64	102
26 Supplies & Materials	10	4	14
31 Equipment	8	-	8
Total	701	127	828

Analysis of Increase

Necessary Pay	11
Inflation	5
Program Funds	111

ABSTRACT - Research and education are among the principal objectives and responsibilities of the Smithsonian. In order to foster and stimulate the pursuit and dissemination of knowledge, the Institution has promoted scholarly and academic ties with other learned institutions and has offered its resources for learning--its collections, professional staff, libraries, laboratories and field sites--to the general public and to the academic community. These ties are developed and maintained through competitive awards for research projects, programs in higher education, symposia and seminars, and learning opportunities at the elementary and secondary levels provided by the Office of Fellowships and Grants, the Office of Smithsonian Symposia and Seminars, and the Office of Elementary and Secondary Education. For FY 1987, an increase of $111,000 is requested to support the symposium, "Constitutional Roots, Rights, and Responsibilities," to be sponsored by the Office of Smithsonian Symposia and Seminars ($100,000), and a three-part program of the Office of Elementary and Secondary Education celebrating the bicentennial

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($11,000). Necessary pay of $11,000 is required for existing staff and an amount of $5,000 is sought to compensate for the effects of inflation in nonsalary areas of expense.

PROGRAM - I. The Office of Fellowships and Grants: With base funding of 9 workyears and $273,000, the Office of Fellowships and Grants (OFG) manages Smithsonian fellowships, all stipend appointments, and various research support programs. Resources for administration of these programs are included here, as are costs of Institutional visiting academic appointments. Responsibility for the administration of the Special Foreign Currency Program was transferred from the Office of Fellowships and Grants to the Directorate of International Activities in October 1985.

Academic appointments from the Office of Fellowships and Grants are intended to enhance Smithsonian research and to foster communication and collaboration between the Institution and universities, museums, and research centers situated in the United States and abroad. Fellowships, internships and other visiting appointments enable the Smithsonian to further the research of junior and established scholars, to profit from an intellectual interchange with them, and to ensure full use of Smithsonian resources.

The collections and facilities of the Smithsonian, as well as the curators and scholars who use them, offer unparalleled and essential resources for specialized study. Access to historical and anthropological objects, original works of art, biological specimens, living animals and plants, and ecological systems makes the Smithsonian a unique complement to university education.

Smithsonian resources are available nationally and internationally to students and scholars. Access to these resources is facilitated by the various forms of financial support offered by the Institution. Stipends are awarded primarily with nonappropriated Trust funds, enabling research in all areas of the Institution and encouraging interdisciplinary projects which draw upon the resources of several bureaus. In FY 1985, 89 predoctoral and postdoctoral fellowships were awarded through an Institution-wide program bringing the total number of recipients since 1965 to 1,290 fellows. Of the 89 fellowships offered in FY 1985, 15 were to foreign students and scholars representing ten countries. Additional fellowships, which provide research opportunities more closely tied to bureau interests and needs, also are offered with nonappropriated Trust funds or appropriated funds designated for the bureaus. In FY 1985, with funds allotted to OFG, approximately 92 visitors came to the Institution, for periods ranging from a few days to several weeks, to work in collaboration with OFG's research staff.

In addition to these appointments for students and scholars, several awards are offered at the senior level to persons of distinction and proven accomplishment. Now in its sixth year, the Regents Fellowship Program, supported with nonappropriated Trust funds, continues to bring eminent visiting scholars to the Institution. Several senior fellowships also are awarded through bureau funding, for example, the Charles A. Lindbergh Chair of Aerospace History and the Martin Marietta Chair in Space History at the National Air and Space Museum, and the Harold P. Stern Fellowship at the Freer Gallery.

In FY 1983, the Smithsonian established the James E. Webb Fellowship, named in honor of the distinguished former administrator of the National Aeronautics and Space Administration and Regent Emeritus of the Smithsonian Institution, to promote excellence in the management of cultural and scientific not-for-profit organizations. Awards are given to persons from within and without the Institution to pursue individual interests in formal academic and work situations.

The Office of Fellowships and Grants coordinates Smithsonian academic internships by informing students and organizations of the opportunities available, distributing

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applications, and administering internship stipends. OFG, in conjunction with other Smithsonian offices and bureaus, also assists with the activities of the Smithsonian's Internship Council. In FY 1985, 87 students, 28 of whom were minority students, were awarded internship stipends supported with nonappropriated Trust funds.

In addition, as part of the Institution's efforts to increase minority participation in its academic and educational programs, six fellowships were awarded to minority faculty members. In January 1983, OFG assumed responsibility for the Cooperative Education Program, which places minority students in positions throughout the Institution, with the hope that permanent placements will develop for these students. In FY 1985, five students were placed throughout the Smithsonian, and the National Museum of American History hired, in a permanent position, one of the students who completed her Ph.D. and fulfilled the Cooperative Education requirements. The Native American Program, established in 1984, was designed to promote access to Smithsonian collections by Native Americans and to encourage participation in Smithsonian work related to North American Native people. Through the Program, the Office of Fellowships and Grants has awarded appointments to 13 Native Americans to conduct independent and directed research. The Institution will continue these special efforts through internships, fellowships, and cooperative education appointments.

II. Office of Smithsonian Symposia and Seminars - With base funding of 3 workyears and $99,000, the Office of Smithsonian Symposia and Seminars (OSSS) serves as a center for interdisciplinary studies and communications, with special emphasis on current research and its implications. The Office's wide-ranging activities include research and analytical exploration, scholarly and professional exchange, and publication of educational materials. OSSS regularly administers and organizes major symposia in the Smithsonian's international series, the continuing seminar series, and individual discussion programs, all focusing on themes of public interest. In addition, the OSSS acts as a resource center for visiting scholars and intermediate students, maintains close association with other academic institutions in the United States and abroad, and represents the Institution at national and international meetings and conferences.

Of major importance in FY 1985 was the symposium, "The Canvas of Culture," organized in connection with the other Smithsonian activities celebrating the Festival of India. This symposium brought together 50 distinguished participants from India and the United States who were concerned with the rediscovery and redefinition of the past as a means of adaptation for the future. The discussions, which treated the ways in which culture and nature can serve as resources with which to respond to current challenges, produced fresh insights into the recasting of experience and its roots as an adaptation for the future. The collected presentations will be published in book form.

"Constitutional Roots, Rights, and Responsibility," the ninth international symposium, will provide a long-term educational program in civics and representative government based on the unique history of the United States. The centerpiece of the symposium will be a structured series of meetings addressing the history of political thought, self-governance, and the duties and privileges of citizenship. This will be supplemented by ancillary activities involving graduate school and secondary level students; undergraduate research into local political customs and their origins; public action organizations (such as the League of Women Voters); roles of the media in protecting civil liberties; and participation by other nonscholarly groups. In this manner, emphasis will be given to the all-inclusive nature of American democracy. In developing final plans, the Smithsonian anticipates working with outside organizations and government officials to foster greater understanding and appreciation of the country's founding documents.

Among the singular events organized this year was "Public Enjoyment of Irish Legacies: Castles, Gardens, and Scientific Wonders." The Honorable Desmond Guinness,

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founder and president of the Irish Georgian Society, and Lord Rosse, Seventh Earl of Rosse, discussed landmarks such as Birr Castle and its famous telescope, built by local craftsmen in 1842 (the world's largest at the time) for the then-astronomer, Lord Rosse. A one-day colloquium was held at the Cooper-Hewitt Museum, New York City, on October 19, 1985, on "Liberty: As Idea, Icon, and Engineering Feat," in anticipation of the centennial of the Statue of Liberty in 1986. Attention also was given to the Brooklyn Bridge, for appropriate technological context.

The Smithsonian Institution Press in December 1985 published High Technology & Human Freedom, which was based on the eighth international symposium, December 1983, with Lewis Lapham (editor of Harper's) as the editor. A second volume based on the Orwellian symposium is now being edited for publication later in 1986.

III. Office of Elementary & Secondary Education - With base funding of 7 workyears and $329,000, the primary function of the Office of Elementary and Secondary Education (OESE) is to make Smithsonian resources for learning and teaching available to local and national school communities and other specialized audiences. Working in close cooperation with the various Smithsonian education offices, OESE is the one Smithsonian office in a position to provide pan-Institutional programming for elementary and secondary schools. OESE programs include workshops and seminars for teachers, publications and audio-visual materials for teachers and students, a summer intern program for high school students, and a Career Awareness Program for minority young people from the District of Columbia public schools. The Office also coordinates a wide range of services for disabled visitors.

OESE offers a range of programs designed to encourage the effective use of museums by schools, both locally and nationally. During FY 1985, a workshop and seminar program for teachers attracted more than 1,000 participants to 40 programs, including ten summer courses. These programs resulted in the development of curriculum units based on the Smithsonian's collections. Summer programs for teachers include an orientation series introducing participants to a variety of Smithsonian resources, as well as a series of in-depth, one-week, fully-accredited seminars on such topics as "Teaching Life Science Through Direct Observation," "Museums and Language Development," and "Teaching American Cultural History through Art." During the summer of 1985, OESE also sponsored, in cooperation with the University of Virginia, a graduate level course on "Using Museums to Teach Writing" for a national audience of school librarians, teachers and curriculum specialists. The effectiveness and popularity of these national outreach programs are demonstrated by both formal evaluations and the continued demand for these services by teachers throughout the United States.

In FY 1985, OESE continued to sponsor a series of regional workshops in communities across the United States to promote the use of museums as educational resources. Among the regions taking part in this program in FY 1985 and FY 1986 are Oak Ridge, Tennessee; Philadelphia, Pennsylvania; Waterloo, Iowa; and Jackson, Michigan. Approximately 2,000 teachers will be reached by the regional workshops in the course of an 18-month period.

In order to promote cooperation and exchange of information between the Institution and schools in the Washington metropolitan area, two publications, which inform teachers about the variety of educational opportunities available at the museums, entitled "Let's Go," and "Through Looking and Learning: The Museum Adventure," are sent to approximately 11,000 teachers. To share these same teaching concepts with a national audience, OESE distributes "ART TO ZOO," a classroom newspaper, to more than 70,000 teachers and museum education departments throughout the United States. OESE also circulates, free of charge, two slide loan packages entitled "The Museum Idea" and "Museums as Storytellers" which reach an estimated 1,500 students during each school year.

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During FY 1985, OESE continued its efforts to make Smithsonian programs accessible to disabled visitors by providing interpreters at special events, lectures, and tours, as well as by providing guidance to the various Smithsonian museums which were seeking ways to provide more effective programming for retarded, hearing-impaired and blind visitors. In addition, sign language classes were given to teach approximately 75 Smithsonian educators, guards, and other employees how to communicate with hearing-impaired visitors; a simplified guidebook to the Smithsonian was produced for retarded and hearing-impaired persons; and an "outreach kit" was developed to encourage reading and writing among language-delayed students.

In a related effort, OESE serves as Smithsonian coordinator for the U.S. Department of Education's new Federal Employees Literacy Training (FELT) program. This involves recruiting FELT volunteers from among Smithsonian staff members, assigning them to local reading centers, and monitoring their progress. Fourteen volunteers have recently been recruited for the first session of this program at the Smithsonian.

EXPLANATION OF PROGRAM INCREASE - For FY 1987, an increase of $111,000 is requested to support the symposium "Constitutional Roots, Rights, and Responsibilities," to be sponsored by the Office of Symposia and Seminars ($100,000), and a three-part program of the Office of Elementary and Secondary Education celebrating the bicentennial of the Constitution ($11,000).

Bicentennial of the Constitution ($111,000) - For FY 1987, an increase of $100,000 is requested for the Office of Symposia and Seminars to support "Constitutional Roots, Rights, and Responsibilities," a major international symposium, scheduled for May 1987, which will celebrate the 200th anniversary of the U.S. Constitution and Bill of Rights. The symposium format offers the most effective way to deal with the history of political thought and the effects of ideas concerning democracy, liberty, and self-government on the behavior of today's citizenry. Essays will focus on such questions as "Where did the authors of our founding document find their ideas about governance and law?"; "What have two hundred years of experience with the Constitution taught us about its use in the future?"; and "How can duties of citizens be learned along with their constitutional rights?." New historical work on the Scottish Enlightment will produce a special session. These essays and ensuing discussions will form the foundation of a book on the Constitution and Bill of Rights.

In addition to other bureaus of the Smithsonian, OSSS is cooperating with the American Bar Association and an informal consortium of United States and overseas colleges and universities in planning the symposium, which is the ninth in a series that began in 1965 with the Bicentennial of the birth of James Smithson. Among other organizations being consulted are the National Archives; the U.S. Capitol Historical Society; Project 1987; the Mentor Group; Americans for Indian Opportunity; The Honorable John O. Marsh, Jr., Secretary of the Army; and staffs of the National Endowment for the Humanities, the U.S. Department of Education, and the Council for the Advancement of Citizenship. Special attention will be given to the participation of youth in the symposium as well as that of established scholars and statesmen. (A cable television network will be invited to provide live coverage of the symposium.)

For FY 1987, an increase of $11,000 is requested for the Office of Elementary and Secondary Education to support a three-part program for the bicentennial celebration. The first component of this program would be a day-long seminar for Washington, D.C. area school teachers and administrators on effective methods for teaching the Constitution. This seminar, sponsored in conjunction with the Office of Symposia and Seminars, will involve participation by the National Archives and Record Service, the National Committee for the Bicentennial of the Constitution, the National Portrait Gallery, and the National Museum of American History, whose staff will provide the faculty for the program. Following an introductory session with a keynote address by a distinguished authority, the

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audience will separate into small groups to discuss such topics as "The People Who Framed the Constitution" and "The Constitution as a Living Document." OESE estimates the total cost of this seminar to be $3,000 (for speaker honoraria and travel, and staff overtime).

The second component of the program would be an one-hour videotape based on the seminar. This tape, produced with the help of Smithsonian's Office of Telecommunications, at an estimated cost of $7,000, will be loaned free of charge to schools throughout the Nation to further student understanding of the history and life of the Constitution.

The third component of the program would be a special issue of the OESE publication, "ART TO ZOO," informing teachers of the myriad resources available to them in their city and county governments which would enrich their teaching of the United States constitutional form of government. Three thousand extra copies of this special issue would be printed (at an estimated cost of $1,000) for distribution with the videotape of the seminar.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - I. Office of Fellowships and Grants: These are provided from allotments which are designated primarily for an Institution-wide program of graduate student, predoctoral, postdoctoral and senior fellowships, as well as opportunities for shorter visits from scholars and students (estimated expenditures of $1,475,000 in FY 1986 and $1,725,000 in FY 1987).

The Regents Fellowship Program continues to bring distinguished visiting scholars to the Institution (estimated expenditures of $140,000 in FY 1986 and in FY 1987). The James E. Webb Fellowship promotes excellence in the management of cultural and scientific organizations (estimated expenditures of $30,000 in FY 1986 and $25,000 in FY 1987). Funding also is provided to cover the stipends for minority internships and faculty fellowships (estimated expenditures of $80,000 in FY 1986 and $90,000 in FY 1987); and fellowships for minority students pursuing graduate education (estimated expenditures of $30,000 in FY 1986 and in FY 1987). Starting in FY 1985, funding also has been provided for the Native American Fellowship Program (estimated expenditures of $50,000 in FY 1986 and in FY 1987); and a pilot program to support a cooperative effort with Howard University (estimated expenditures of $25,000 in FY 1986).

An allotment supports a small portion of the administration of the Office of Fellowships and Grants' academic programs (estimated expenditures of $118,000 in FY 1986 and $127,000 in FY 1987).

II. Office of Smithsonian Symposia and Seminars: An allotment is provided for salary and support costs for two staff members and for partial support of the "Man and Beast II" symposium planned for FY 1986 and the "Constitutional Roots, Rights, and Responsibilities" symposium scheduled for FY 1987 (estimated expenditures of $148,000 in FY 1986 and $213,000 in FY 1987).

III. Office of Elementary and Secondary Education: A summer intern program, now in its eleventh year, gives 34 graduating high school students an opportunity to participate in a learning service program at the Smithsonian, working behind the scenes with curators and other museum professionals. High school students from all 50 states and the District of Columbia are eligible to apply for admission to either of two five-week sessions. Successful candidates receive free lodging and transportation to and from Washington, D.C., as well as a stipend. The program will be expanded in FY 1986 to admit six more interns (for a total of 40). In addition, a Career Awareness Program (CAP) for the District of Columbia public schools introduces minority youth to career opportunities at

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the Smithsonian as part of the Institution's affirmative action effort. A total of 80 students from two District high schools participated in CAP during the 1984/85 school year, and through the District's Summer Youth Employment Program, arrangements were made for 26 of these students to work at the Smithsonian during the summer of 1985. Furthermore, after extensive evaluation of CAP, plans are being initiated to extend the Program nationally through development of a manual and curriculum package for use by teachers, students and museum educators. These materials will be designed to interest minority young people in museum careers (estimated expenditures of both programs are $175,000 in FY 1986 and $197,000 in FY 1987).

Restricted Funds - I. Office of Fellowships and Grants: These consist of restricted endowments, gifts and grants from individuals, foundations, organizations or corporations which specify their use for a particular project. For example, an endowment from the Walter Rathbone Bacon Scholarship supports awards and research on fauna from outside the United States (estimated expenditures of $15,000 in FY 1986 and in FY 1987). A Rockefeller Foundation grant will support fellowships for the National Museum of African Art and the Sackler Gallery (estimated expenditures of $60,000 in FY 1986 and $5.,000 in FY 1987).

II. Office of Smithsonian Symposia and Seminars: Funds are anticipated to partially support the Office's participation in the "Man and Beast II " symposium (estimated expenditure of $59,000 in FY 1986) and the "Constitutional Roots, Rights, Responsibilities" symposium (estimated expenditure of $100,000 in FY 1987).

III. Office of Elementary and Secondary Education: Another OESE program for students is "Exploring the Smithsonian," which served close to 5,800 young people in FY 1985. Supported in part by a grant from a local foundation (estimated expenditures of $31,000 in FY 1986 and $30,000 in FY 1987), this program provides bus transportation to bring junior high school students to the Smithsonian museums to take part in a selection of interdisciplinary lessons on curriculum-related subjects in art, history and science. OESE works with the various Smithsonian education offices to plan and maintain the program activities.

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COLLECTIONS MANAGEMENT/INVENTORY PROGRAM

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
			General		Special Purpose					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1985 Actual	40	1,019	-	-	-	-	-	-	-	-
FY 1986 -Base	38	1,121	-	-	-	-	-	-	-	-
-PL 99-177***		1,073								
FY 1987 Estimate	38	1,145	-	-	-	-	-	-	-	-

* FTE = Full-time equivalent

** FTP = Full-time permanent positions

*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	38	-	38
11 Personnel Compensation	536	2	538
12 Personnel Benefits	72	1	73
25 Other Services	434	18	452
26 Supplies & Materials	44	2	46
31 Equipment	35	1	36
Total	1,121	24	1,145

Analysis of Increase

Necessary Pay	3
Inflation	21

ABSTRACT - A plan for scheduling and performing inventories of the collections was developed by the Institution in September 1978. To accelerate the process, a special appropriation of $500,000 was made to the Institution in FY 1979. Funding of the inventory program has continued through FY 1986, and has amounted to $5.9 million. This funding has been allocated primarily to the inventory projects of the three museums with the greatest need. These museums are the National Museum of Natural History/Museum of Man (NMNH/MOM); the National Museum of American History (NMAH); and the Cooper-Hewitt Museum. In FY 1986 and FY 1987 the Institution will again direct most of the resources of this program to these three museums to allow the museums to continue the inventory process with emphasis placed primarily on updating and refining inventory data, matching it with existing collections records and reconciling differences. In FY 1986, funds are provided to the Archives of American Art to allow it to improve inventory control over the 75,000 works of art on paper held in the collections. No program increase is requested for FY 1987. Necessary pay of $3,000 is required for existing staff and an amount of $21,000 is sought to compensate for the effects of inflation in nonsalary areas of expense.

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PROGRAM - In June 1983, the Institution completed the first baseline inventory of the collections. The inventory was an integral part of the collections management program established in 1978. The emphasis on collections management was designed to ascertain the full extent of the Institution's holdings and to ensure accountability through the maintenance of comprehensive records on the collections. Efforts to improve the collections management program, including collections inventory, have been pursued actively since the initial inventory cycle was completed.

Prior to the initial inventory, each Smithsonian museum established schedules and procedures, and delineated the information which would be required to conduct an inventory. Most Smithsonian museums (National Museum of African Art, Freer Gallery of Art, Hirshhorn Museum and Sculpture Garden, National Portrait Gallery, National Museum of American Art, and National Air and Space Museum) along with the National Zoological Park were able to complete their inventories within the five-year period outlined in the collections management plan using their base resources. The monumental size of the collections of NMNH/MOH and NMAH and the absence of any prior inventory information at the Cooper-Hewitt Museum dictated that funding be provided to supplement the base resources of these museums. This additional funding was made available through appropriations beginning in FY 1979. In FY 1986, funds were received to enable the Archives of American Art to begin a more comprehensive inventory of the 75,000 works of art on paper within its collections. Each of the museums has developed improved automated data systems to facilitate documentation of information for all phases of the collections management and inventory process.

The FY 1987 base of $1,145,000 will enable the National Museum of Natural History/Museum of Man, the National Museum of American History, and the Cooper-Hewitt Museum to continue to maintain and refine inventory data, and will allow the Archives of American Art to pursue its inventory program. The following chart displays the base resources which are applied to collections management efforts and the portion of the FY 1986 appropriation and the FY 1987 estimate that will be allocated to the museums and the Archives, to the Office of Information Resource Management, and to the Office of the Registrar.

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COLLECTIONS MANAGEMENT/INVENTORY PROGRAM

(Dollars in Thousands)

	Natural History	American History	Cooper-Hewitt	Archives of American Art	Other	Total
FY 1986 Base Resources	$ 857	$ 741	$ 70	$ 25	$ -	$1,693
FY 1986 /1 Portion of $1,121,000	505	409	82	64	61 /2	1,121
TOTAL FY 1986	$1,362	$1,150	$ 152	$ 89	$ 61	$2,814
FY 1987 Base Resources	$ 857	$ 741	$ 70	$ 25	$ -	$1,693
FY 1987 Estimated Portion of $1,145,000	515	419	84	65	62 /3	1,145
TOTAL FY 1987	$1,372	$1,160	$ 154	$ 90	$ 62	$2,838

/1 FY 1986 Congressional appropriation.
/2 Funds were allocated to the Office of Information Resource Management ($56,000) and the Office of the Registrar ($5,000).
/3 For FY 1987; Office of Information Resource Management, ($57,000); for Office of the Registrar, ($5,000).

The following narrative describes the specific progress made by NMNH/MOM, NMAH, the Cooper-Hewitt Museum, the Archives of American Art and the inventory tasks before them.

National Museum of Natural History/Museum of Man

The initial base line inventory of the National Museum of Natural History/Museum of Man was conducted on three levels: the specimen level, covering individual specimens; the batch level, including medium-sized groups of related specimens; and the collection level, consisting of large assemblies of related materials. By the end of the initial phase in June 1983, the Museum had compiled specimen-level inventories for the known type, valuable, and sensitive specimens; specimen- or batch-level inventories for much of the material to be moved to the Museum Support Center; and collection-level inventories for the remaining collections. At the batch and collection levels, the number of specimens covered by each inventory record was estimated following careful sampling of each group of materials.

Since 1983, inventory efforts have focused on the reconciliation of base line inventory data with available documentation, routine maintenance, special maintenance associated with the move to the Museum Support Center, and refinement of collection level inventories containing specimens of particular scientific interest. The reconciliation of the gems and minerals collections is complete, and the reconciliation of the archeology and ethnology collections is almost complete.

The Museum recently created a new automated registration system which is now in operation in the Shipping Office and the Registrar's Office. The system is being extended to all departments as rapidly as possible. The system will enable the Museum to track loans, exchanges, and accessions more effectively. Other automated systems (such as the Collection Information File which contains data on the size, location and priority

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for refinement activities for each of the Museum's collections) are being developed to improve access to and accountability for the collections. In conjunction with the Office of Information Resource Management, work also has begun on the conversion of inventory files to the new mainframe and information retrieval software.

Limited testing will be done on new technologies to accelerate the cyclical inventory process and to track objects. The Museum also will test lap-top portable computers for source entry of inventory data so that records can be automated without having to go through a paper process.

The National Museum of Natural History/Museum of Man has used the majority of funds received through the special collections management/inventory appropriation to support inventory technicians, clerical personnel, and computer usage costs. In its five-year collections management/inventory plan, the Museum has projected a department-by-department analysis of the steps that must be taken to refine inventory data while maintaining current inventory records. This plan outlines the need for additional resources for personnel and computer expenses in future years. These resources will be actively sought.

National Museum of American History

In FY 1985, the National Museum of American History continued to provide edited print-outs of base line inventory data on general collections to permit the staff to verify and refine original inventory data. Print-outs for all units, except the special collections, will be delivered in FY 1986. The National Numismatic and National Philatelic collections will receive print-outs in FY 1987. A major goal of the Museum has been to incorporate the inventory function into a more comprehensive collections information system which includes object accessioning, cataloguing, loan records, movement of collections and deaccessioning. As part of this objective, the Museum has developed an automated Registration Transaction Tracking System to permit information to be entered into the record at several points as the objects are processed by the Office of the Registrar and curatorial units. The System ultimately will enable the Museum to produce catalogue cards, accession memoranda and other collections management documents without duplication of effort.

The inventory at Silver Hill Facility remains difficult to conduct since many of the collections are stored in asbestos contaminated buildings and the removal of the asbestos is expected to require four years to complete. As the asbestos removal program continues, the staff cleans and relocates collections and records new locations. Other necessary improvements to the records will be made as the asbestos removal program schedule permits.

Cooper-Hewitt Museum

Three major tasks face the Cooper-Hewitt Museum in its future collections management/inventory activities. These tasks involve the continuous, cyclical inventory of the permanent collection; reconciliation of discrepancies revealed by matching base line inventory records with original accession records; and the refinement of automated data base records for each inventoried object.

The collections management/inventory process is conducted by four technicians assigned individually to the departments of Prints and Drawings, Textiles and Decorative Arts, and to the Registrar's Office. Each cycle of the planned cyclical reinventory procedure will take seven years. Since the bulk of the collections which came from the Cooper Union Museum were inadequately documented, particular attention is being paid to upgrading existing catalogue records and to reconciling the automated inventory entries with problematic preinventory records. This work will proceed at least through FY 1986

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and FY 1987. It may be necessary to continue the work for one or two years thereafter until remaining reconciliation problems can be determined to be of such little consequence that no further effort is warranted.

Location files are being created and updated in each department. Some resources are being applied to support photographic documentation of the permanent collection and to expand the Museum's computer capability to enable it to process collections information more rapidly. In FY 1986 and FY 1987, planning will begin for the relocation of collections now stored in areas of the Museum which will be affected by the renovation of the Museum. Inventory and related collections management measures will be crucially important factors in the Museum's ability to maintain ready access to and full accountability for its collections.

Archives of American Art

From 1980 to 1982, the Archives of American Art conducted a survey of its accession records to prepare a list of works of art contained in its collections. On the basis of this survey, it is estimated that there are some 75,000 works of art on paper in those collections.

Using this preliminary information, the Archives will initiate a more comprehensive inventory of these works of art in FY 1986. During this inventory, a shelf survey will be made and the data collected will be reconciled with the original accession records. Preservation measures will be applied simultaneously to safeguard against deterioration of the works of art. Serious conservation problems also will be noted and a record established to permit formulation of plans for a conservation treatment program.

In future years, the Archives will conduct a survey of its estimated 400,000 photographs in the collections. The collection of photographs already has been screened and nitrate negatives have been removed.

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MUSEUM SUPPORT CENTER

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
			General		Special Purpose					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1985 Actual	45	4,678	-	-	-	83	-	-	-	-
FY 1986 -Base	36	4,891	-	-	-	151	-	-	-	-
-PL 99-177***		4,680								
FY 1987 Estimate	36	6,366	-	-	-	-	-	-	-	-

* FTE = Full-time equivalent
** FTP = Full-time permanent positions
*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	36	-	36
11 Personnel Compensation	967	125	1,092
12 Personnel Benefits	97	9	106
21 Travel	12	-	12
23 Rent, Communications & Utilities	2	-	2
24 Printing & Reproduction	1	-	1
25 Other Services	259	8	267
26 Supplies & Materials	295	33	328
31 Equipment	3,258	1,300	4,558
Total	4,891	1,475	6,366

Analysis of Increase

Necessary Pay	11
Inflation	14
Program Funds	1,450

ABSTRACT - The budget request for FY 1987 consists of the administrative and building management functions of the Museum Support Center (MSC), the activities associated with preparing collections for the move and their transport, and the storage equipment for the collection storage pods of the MSC. Funding for Smithsonian units which will operate in the MSC or provide services for the Support Center is contained in the appropriate sections of this budget document. These units are the Conservation Analytical Laboratory, the National Museum of American History, the Smithsonian Institution Libraries, the Office of Protection Services, the Office of Plant Services, the Office of Printing and Photographic Services and the Office of Horticulture.

For FY 1987, a total of 36 workyears and $6.366 million is requested to support the following: the purchase of a collections storage system consisting of concrete decks and self-standing cabinets, with assorted shelves, drawers and doors ($4.558 million); costs

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for preparing collections for the move and transporting them to MSC ($862,000); and MSC administrative and building management services (36 workyears and $946,000). The requested funding, including increases of $1.3 million for MSC equipment and $150,000 for the preparation and transfer of collections to the MSC, is essential to continue the planned development and use of the MSC as a major institutional resource for the care and preservation of National Collections and for research programs associated with those collections. For MSC administration and facilities management, necessary pay of $11,000 is required for existing staff and an amount of $14,000 is sought to compensate for the effects of inflation in nonsalary areas of expense.

PROGRAM - The Museum Support Center, located in Suitland, Maryland, provides space for storage of museum collections and for conservation and other laboratory work areas, conservation training, and building maintenance and protection services. Several individual bureaus and units of the Smithsonian will make use of the Museum Support Center, including the National Museum of Natural History; the National Museum of American History; and the Conservation Analytical Laboratory, which occupies a substantial share of the laboratory wing for its conservation treatment, scientific analysis and training functions.

At the Museum Support Center, collections storage space is provided in four discrete sections (or pods) of the building. One of the pods (Pod 3) has been reserved for the storage of "wet" collections (those stored in alcohol), and a portion of another pod (Pod 4) will be used for "high-bay" storage for very large objects. The remaining storage area (Pods 1 and 2, and a portion of Pod 4), approximately five-eighths of the total storage space, will be occupied by collections stored in cabinets on three levels of storage decks.

Museum Support Center Storage Equipment - Design work for a collections storage system for the MSC began in September 1980. In consultation with the architectural/engineering team's material handling consultant and with the General Services Administration (GSA), and on their recommendation, the Institution decided to use a storage system utilizing a number of standard components assembled into a self-supporting three-level storage structure capable of holding the various kinds of shelves, drawers and screens needed to keep the collections safe from dust and insects while making them accessible for research, study and exhibition. In this first concept, the ducts and vents of the heating, ventilation and air conditioning (HVAC) system and other essential utilities were integrated with the structure of the storage system. This design was a pioneer effort, since no other such system existed for museum purposes. On the basis of information available in 1980, the three-level storage system was judged to be lighter, easier and more flexible to install, and cheaper than the alternatives. Most important, the performance specifications for the system required that it be "bug" and dust tight as well as corrosion resistant for the safety of the collections and the use of necessary fumigants.

As design work proceeded, planning for the system was divided into two phases. Phase I involved Pod 3 and the storage of "wet" collections. This was a relatively simple and straightforward storage structure which was installed under contract and accepted for occupancy in November 1984. Phase II of the planning process covered the design of the more complex system involving tight, closed cabinets for dry collections to go into Pods 1, 2, and 4. Using the performance specifications that were developed during the planning period, bids were solicited and, after receipt of competitive bids, an award for construction of this part of the storage system was made in 1984 to the lowest bidder.

After intensive efforts by the Institution, GSA, the architectural/engineering firm and the contractor extending over many months, the Institution was advised late in 1984 that the requirements for tightness could not be met by the self-supporting system and

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that even if the requirements were achieved initially, excessive costs would be incurred in the future for the repeated caulking and sealing of the thousands of joints in the structure, some of which would become practically inaccessible after the structure had been assembled. Further, according to tests made by the Smithsonian's Conservation Analytical Laboratory and others, some of the paint used by producers of standard components failed to meet the contract specifications for fumigant resistance.

To overcome these shortcomings, the general contractor recommended an alternative storage system making use of two concrete decks to create three levels of storage areas within Pods 1, 2, and 4, and premanufactured (not field assembled) storage cabinets which can be properly constructed, sealed and finished in a factory under quality control measures. Since the metal rack system first considered could not be constructed to meet or maintain the required standards, the Institution and GSA concluded that continuation of the procurement under the initial concept would not be in the best interests of the Institution and that the recommended alternative would solve the cabinet enclosure and paint problem. The storage cabinets proposed to be used are the type similarly being used satisfactorily within other areas of the Institution. Under the new storage system, the Institution will receive virtually as much storage capacity as had been planned initially. Some modification of the existing pod floor slabs has been necessary to properly distribute weight loads of the new system.

There are several advantages in using the concrete deck and storage cabinet system. Constructing full decks, rather than installing self-supporting three-level racking in only portions of the pods as had been planned for the initial move, eliminates the necessity of installing additional floors and utilities some time in the future. The necessary deck space and all utilities can be completely constructed in all areas of the pods where three levels of storage are required. All heavy construction will be completed early in the project. As a result, the Institution will not have to provide physical barriers that would have been required to secure collections against theft and prevent damage to them from dust and vibration created by installation of large segments of the three-level system in the future. A further advantage is that this alternative will allow reuse at MSC of some storage cases presently being used within the Natural History building.

Although not all of the engineering work has been completed, it is anticipated that the cost of the concrete deck system will remain within the projections based on low bids received in 1983 for storage equipment for the initial move, as well as within the estimates projected for the storage equipment needed for the entire Museum Support Center. To keep within this funding framework, however, the Institution revised the order of acquisition of some of the equipment; installation of "high-bay" equipment for storage of large objects has been deferred and funds for that equipment will be sought in the FY 1988 budget request. The Institution will also reduce the number of storage cabinets it will procure under the contract and substitute instead a number of existing storage cases from the National Museum of Natural History. This substitution would not have been possible with the rack-storage structure.

The total cost of the storage system for the initial move, including "wet" storage equipment and the system with concrete decks, is estimated to be $23.3 million. Through FY 1985, the Institution has received a total of $13.8 million in appropriated funds and has reprogrammed $1.6 million from other appropriated funds, producing a total of $15.4 million. The Institution also will apply an amount of $3.3 million of appropriated funds in FY 1986 for acquisition of additional increments of the needed cabinets for the initial move, utilizing prices established in the unit-price options contained in the contract, and which remain valid through September 1987. To acquire the remaining cabinets needed to accommodate collections to be relocated in the initial move, the Institution requests an amount of $4.6 million in FY 1987.

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The Smithsonian will seek additional funding in FY 1988 through FY 1991 to provide for the acquisition of the "high-bay" system and for additional cabinets to accommodate collections growth and to meet storage needs of museum bureaus of the Institution other than the National Museum of Natural History and the National Museum of American History. Additional funding of approximately $16 to $17 million, with exact costs subject to future bid solicitations, will be needed in FY 1988 through FY 1991 to make full utilization of all available storage space in the MSC.

Move of the Collections to the Museum Support Center - The move of Smithsonian collections to the Museum Support Center is unprecedented in the museum community in terms of volume, characteristics and variety of the collections, and the distance of the move. The National Museum of Natural History alone is sending millions of objects and specimens to the MSC. The entire transfer of the collections is occurring over a period of several years, with portions being moved only when appropriate storage equipment at the MSC has been installed. Using the principles and techniques of the "Critical Path Method" (CPM), a detailed plan for coordination of each phase of the move was developed. Information affecting the complex schedules has been automated and is continuously updated. Simultaneously, decisions have been made regarding the specific methods of packaging and modes of transport appropriate to the particular collections and objects involved.

Funds totaling approximately $3.2 million have been appropriated in FY 1983 through FY 1986 to prepare the collections for relocation and to perform the move. Since FY 1983, temporary museum technicians have been preparing the collections to be moved, including cleaning and stabilizing objects; packing and moving them within the museums to staging areas and then to the MSC; and performing conservation treatment when needed.

In the summer of 1983, work began at several locations to prepare "wet" collections (those stored in alcohol) for relocation to Pod 3, which was specially designed to receive them. Following the acceptance of the "wet" storage structure in November 1984, the process of transferring these "wet" collections from Mall locations to the MSC began. This move was completed in the fall of 1985 (ahead of the projected CPM move schedule), with over 260,000 specimen lots relocated to the MSC in 200 van loads.

Preparation of "dry" collections (to be stored in Pods 1, 2 and 4) is in progress with work being done on the collections of the Departments of Anthropology, Entomology, Mineral Sciences and Vertebrate Zoology. Because of the delay in the scheduled installation of the three-level storage system, some collections have been moved to temporary storage locations at the MSC, including over 190,000 archeological objects (representing 25 percent of those collections) and 15,000 Asian ethnological objects from the Department of Anthropology; over 2,000,000 insect specimens from the Department of Entomology; and over 36,000 petrology specimens from the Department of Mineral Sciences. These and other collections are planned to be moved to their final storage locations beginning in FY 1987 following the installation of storage equipment. Most of these moves are scheduled for calendar years 1987 and 1988, with the relocation of the Department of Anthropology's collections continuing through calendar year 1989.

Because the construction of the "high-bay" storage equipment for the housing of oversized objects (such as totem poles and war canoes) has been delayed until at least FY 1988, the schedule currently projects that the move of collections to be stored in the "high-bay" space will begin in FY 1989 and take approximately two years.

An amount of $862,000 (an increase of $150,000 over the FY 1986 base of $712,000) is sought in FY 1987 to meet ongoing costs associated with preparing collections for the move and with their transfer to the MSC, including the salary costs for the temporary work force engaged in cleaning, packing and moving collections.

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Administration and Facility Management - With FY 1986 base funding of 36 workyears and $921,000, the Office of the Director of the Museum Support Center is responsible for the administrative coordination of the activities of the various user and support units, and for supervision of building management functions at the MSC. This Office administers the automated data processing center used for registrarial and collections management activities, including the move to the MSC, and for the research and informational requirements of the occupants. The Office also enforces the procedures established to control and account for the flow of collections into and out of the MSC, and insures the safety of the collections against pest infestations and other hazards. Under the general supervision of the MSC Office of the Director, the facility manager is responsible for providing shipping and receiving services, moving equipment and objects, overseeing safety and security operations, and cleaning and maintaining all parts of the building. Because of the need to maintain very strict environmental standards for the care and storage of museum objects, cleanliness is a fundamental requirement in the successful operation of a collections management facility. No program increase is requested for FY 1987 for MSC administration and facility management.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - An allotment of $750,000 was provided to purchase special laboratory equipment for the Conservation Analytical Laboratory. Approximately $600,000 was spent through FY 1985 with the balance of $150,000 to be spent in FY 1986.

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ADMINISTRATION

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
			General		Special Purpose					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1985 Actual	247	11,393	171	7,151	14	1,723	-	114	-	-
FY 1986 -Base	250	12,411	186	8,388	2	970	-	111	-	-
-PL 99-177***		11,435								
FY 1987 Estimate	252	12,504	192	10,246	2	428	-	106	-	-

* FTE = Full-time equivalent
** FTP = Full-time permanent positions
*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	250	2	252
11 Personnel Compensation	7,841	-2	7,839
12 Personnel Benefits	1,557	7	1,564
13 Ben. to Former Emp	398	-	398
21 Travel	64	1	65
22 Transportation of Things	5	-	5
23 Rent, Communications & Utilities	204	8	212
24 Printing & Reproduction	32	-	32
25 Other Services	894	39	933
26 Supplies & Materials	815	34	849
31 Equipment	601	6	607
Total	12,411	93	12,504

Analysis of Increase

Necessary Pay	141
Inflation	108
Program Funds	25
Worker's Compensations	192
Grade Target Reduction	-373

ABSTRACT - Administration includes central management, planning, oversight and review provided by the Offices of the Secretary, Under Secretary, Assistant Secretary for Administration, General Counsel and Treasurer. It also covers a wide range of specialized administrative and technical offices. Included among these are Audits and Investigations, Business Management, Congressional Liaison, Contracts, Equal Opportunity, Facilities Services (responsible for Design and Construction, Plant Services and Protection Services, all separately justified), Financial Management, Accounting, and Risk Management. Other offices comprising this grouping include Information Resources

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Management, Management Analysis, Personnel Administration, Printing and Photographic Services, Programming and Budget, Special Events, Supply Services and Travel Services. The funding for the Workers' Compensation account is included here. These organization units receive both appropriated funds and nonappropriated unrestricted Trust funds for their operating support in approximate balance to the overall funding of the Institution. Some offices, however, such as Business Management, Contracts and Risk Management are funded entirely with Trust funds reflecting the nature of their work.

For FY 1987, an increase of 1 workyear and $15,000 is needed to support onsite financial services in the Quadrangle. A further amount of 1.5 workyears and $10,000 is required to annualize the partial year funding for 2 positions provided in FY 1986 for Quadrangle-related support in the Office of Personnel Administration. An increase of $192,000 for workers' compensation is included in this line item as is a reduction of $373,000 reflecting the anticipated savings from the Office of Management and Budget's requirement to reduce the number of employees in grades 11 through 15. These latter two items are discussed in the Uncontrollable Increases section of this budget. Necessary pay of $141,000 is required for existing staff and an amount of $108,000 is sought to compensate for the effects of inflation in nonsalary areas of expense.

PROGRAM - Within this activity grouping, the Office of the Secretary with the assistance of the Office of the Under Secretary is responsible for management and administration including policy determination, program planning, legislation, and the direction and review of performance of activities. The Office of the Assistant Secretary for Administration, including the Director of Facilities Services, is responsible for administrative and technical services and for design, construction, building operation and maintenance and protection services and for the curation of objects in the Castle Building.

The Office of Audits and Investigations is responsible for performing all internal and external auditing and the investigation of any fraud, waste, abuse or white collar criminal activity. Internal audits cover Federal programs as well as Trust-funded activities on a recurring basis. External audits involve the review of documentation in support of claims, cost proposals and cost and pricing data arising from contracts, grants and other financial agreements. The investigative function involves the examination of acts of alleged criminal activities by employees or contractors and the review of programmatic and operational weaknesses susceptible to fraud and abuse.

The Office of the General Counsel provides counseling to the Smithsonian Board of Regents, the Secretary, and the executive and program offices on legal matters involved in Smithsonian administration; coordinates and oversees the conduct of litigation and other adversarial proceedings to which the Institution is a party; reviews administration claims arising out of Smithsonian operations; and generally monitors all aspects of Smithsonian operations for legal implications.

The Office of the Treasurer has responsibility for financial management. This includes the direction of financial planning, accounting, payroll, financial reporting, administration of grants and insurance, risk management, handling of bank relations, oversight of investments and management of certain auxiliary activities. Components of the Office of the Treasurer include: Financial Management, Accounting Services, Risk Management and various business management offices, including Museum Shops, Mail Order, Product Licensing, Concessions and Parking operations.

The Office of Congressional Liaison is responsible for the development and maintenance of the Institution's relationships with the Congress; communication of policies, programs and plans to the Congress; the preparation and clearance of legislative materials and the organization of Smithsonian participation at legislative hearings; and liaison with Federal agencies and organizations having related interests.

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The Contracts Office assists in obtaining Federal grants and contracts for special programs and projects and negotiates certain specialized contracts related to Trust-funded operations.

The Office of Equal Opportunity plans, coordinates and monitors a positive action program to provide equality in employment practices and program activities. Major efforts include the setting of goals and monitoring action to correct underrepresentation in employment of minorities, women and the disabled; assessing program and facility access for disabled persons; providing employee counseling and complaints resolution; developing and overseeing upward mobility, Hispanic and women's programs; and meeting community and national outreach responsibilities through exhibitions and other informative programs throughout the Institution.

The Office of Information Resource Management (OIRM) guides bureaus and offices and senior management in determining information resource management policy; ensures the integrity and security of Institutional data; directs modern computer and communications technology in support of the Smithsonian's program and management information activities; and ensures technical integration of hardware and software required to make information and computer capability widely available. OIRM also administers the Smithsonian's data processing cost center; operates computer system and data communications networks; and performs applied research supporting the Institution's use of data processing and communications technologies.

The Management Analysis Office provides staff assistance and advisory services in support of Smithsonian administrative operations. The Office performs studies of organizations, systems and procedures; prepares and distributes management issuances containing policy and instructions governing operations; and conducts the Institution's forms management program.

The Office of Personnel Administration (OPersA) provides personnel services, advice and assistance to managers and employees of the Institution. Within the laws, rules and regulations of relevant controlling agencies and within the policies of the Institution, the Office is responsible for recruitment, staffing, position classification and wage administration, performance appraisal and merit pay, employee relations and employee benefits planning, processing and communications. OPersA also provides for union/management relations, employee training and career development, employee assistance and counseling, workers' compensation and unemployment insurance processing, records and data maintenance processing, personnel policy development and personnel management evaluation.

The Office of Printing and Photographic Services is the central office for technical advice, guidance and production on photography and duplicating services to curatorial, scientific, technical and administrative staff. Photographic services include studio and onsite photography, photographic copy restoration, printing, preservation of originals under archival conditions, the development and maintenance of an automated catalogue of photographs and sales of materials to the public.

The Office of Programming and Budget formulates the consolidated Federal and nonappropriated Trust fund budgets for review and approval by the Secretary and the Board of Regents. Approved budgets are prepared for submission to the Office of Management and Budget (OMB) and to Congress, and the Office serves as liaison with OMB and Congress on budgetary matters. Appropriated budgets and nonappropriated Trust fund budgets are monitored to help assure that program needs are met, budgetary goals are achieved and that accountability is maintained. The Office participates in the development of the Five-Year Prospectus, advises management on matters pertaining to program planning and development and incorporates financial information in central data bases for use in management reports, budgetary planning and special analyses.

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The Office of Special Events plans and arranges events associated with exhibition openings, seminars, lectures and other activities upon the request of bureaus and offices and outside groups when given the permission to use Smithsonian facilities. A monthly master calendar of special events is maintained.

The Office of Supply Services is responsible for the policy, planning and coordination of the procurement, contracting, property management, and supply programs. The Office procures supplies, materials, contractual services and equipment for research, curatorial, exhibition, administrative and other activities. It negotiates and awards contracts for facility construction, renovation, repair and equipment as well as for automated systems and auxiliary activities such as concessions. Programs are established and monitored for business with small, minority and women-owned firms. The Office also maintains all property records and performs and oversees the regular equipment inventories and boards of surveys to ensure proper accountability, utilization and security.

The Travel Services Office makes travel arrangements in the most economical and effective manner consistent with Smithsonian and Federal travel regulations. Information concerning changes in travel procedures and regulations is distributed to bureaus and offices. Requirements for the use of contract carriers and United States carriers for international travel are enforced. The Office works closely with other offices in the development and implementation of new and revised travel regulations.

Progress in Administrative Support - Major emphasis over the past year and continuing for the current and future budget years includes the supervision of the administrative and support activities to assure their responsiveness to needs and strengthening of the Institution's equal opportunity and affirmative action programs. Continued attention is being given to legal oversight of and counseling on the Smithsonian's programs and improvement of financial management, accounting, monitoring, reporting and auditing systems to assure control and accountability. A number of specific developments merit reporting in the areas of personnel, financial and procurement management, equal opportunity, management information systems and photographic services.

The establishment of an Employee Benefits Office in April 1985 has consolidated the administration of retirement, health benefit, insurance and other such programs. Extensive review of these matters is currently under way. Consolidation will facilitate civil service and trust employee communications and counseling on all aspects of benefits. Improvements in the administration of the unemployment insurance program continue to be made with resultant savings. The Performance Management Review System is being implemented. A new program for training custodial workers has been established.

Major financial management efforts in the current year include continued improvements in the areas of accounts payable, payroll, and recording and reporting the results of operations. In the area of accounts payable, the automation of a "matching system" to include the purchasing, receiving and invoice documents has contributed to more efficient and timely payment of vendors. Further development in this area and other related areas will increase internal controls and overall accountability. Efforts to improve and simplify processing the payroll are continuing. Through the use of the personal computer and the inclusion of more communications linkages, the Office of Accounting and Financial Services has been able to meet increasing financial information needs and provide "point of origin" data retrieval and processing abilities.

Completion of the implementation of the new Federal Acquisition Regulations was an important accomplishment of the Office of Supply Services. Obtaining advance procurement plans from bureaus and offices facilitated prompt procurement and contracting. An effective property management system resulted in tight controls on inventory and the use of large amounts of excess property.

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Equal opportunity efforts are having success with improvements in representation of minority persons and women in professional jobs and in the upper grade levels. There has been steady improvement in program and facility accessibility for disabled persons. Efforts to hire the disabled continue. Greatly expanded opportunities for training and career development are available for minority students and scholars. The Smithsonian has developed working relationships with Washington, D.C. universities and with black colleges and universities. Many internship appointments and faculty fellowships are being made from these and other schools. The Career Awareness Program provides training and incentives to local junior high school students. In addition, there have been special actions to provide information, assistance and exhibitions to minority and women's groups and organizations. Goals of procurement from small and minority businesses were exceeded.

As the Smithsonian completed its third year of formal information resource management activities, significant technical and management changes were under way. The Institution has begun the transition from a central data processing technology to distributed data processing using microcomputers, minicomputers and a new computer mainframe, tied together by a data communications network. Since the new technology affected organization structures and staff roles, management techniques as well as technology have changed. Over the next few years, the pace of the technical and management changes will accelerate. Especially notable were results of the electronic data processing modernization effort. The Smithsonian Institution Bibliographic Information System, a turnkey system for libraries, archival units and individual bibliographies, was expanded to include additional functions, such as acquisitions, and to serve more users. Software for the information retrieval component of a new specimen collections system was selected and a high level systems design was completed as were plans for starting up the system. A new computer mainframe was installed and initial training of technical staff was begun, preparatory to implementation of production systems on the machine during FY 1986, notably the specimen collections system. Planning for an Institutional raceway for voice, data and image communications was advanced. An information center was established to assist staff in the use of information systems and computer capabilities.

In the Office of Printing and Photographic Services, the important effort to convert hazardous nitrate negatives to safety film nears completion. Improvements were made to the cold storage room for archival preservation. A research program into applied photographic preservation methods was initiated. Work continued on video disc production for inventory and research purposes. Office staff continued to be active in teaching programs both within and outside the Institution.

EXPLANATION OF PROGRAM INCREASE - Financial and Personnel Management (2.5 workyears and $25,000) - An increase of 1 workyear and $15,000 is requested for establishing an Accounting Service Unit in the Quadrangle to support the onsite financial needs of the International Center, the Museum of African Art, the Sackler Gallery and other activities located there. A further amount 1.5 workyears and $10,000 is required to annualize the partial year funding for two positions approved in FY 1986 for Quadrangle-related support. (The amount of $20,000 provided in FY 1986 for the one-time purchase of computer equipment also will be applied toward the funding of these two positions in FY 1987.)

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - Funding of these centralized services from both appropriated and nonappropriated sources produces a ratio of Federal and Trust fund administrative support approximately in proportion to the operating program expenditures of the Institution as a whole. The amounts shown under Unrestricted General represent administrative expenditures for those units that are organizationally under Administration. Certain other units, receiving administrative allotments, are reflected

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in the appropriate section of the budget request. For example, administrative costs for the Smithsonian Astrophysical Observatory are reflected within its nonappropriated Trust funds section. Also included are expenditures for producing, distributing and marketing photographic material and slide sets, and funds to help defray the costs of the Office of Printing and Photographic Services. A program allotment is made to the Office of Equal Opportunity to support community outreach through exhibits and publications, specifically aimed at women and minorities. Funds also are provided for the costs of the development and implementation of the personnel/payroll system which is designed to provide a consolidated information base for a wide variety of personnel, budgetary and other financial data. Special Purpose funds include gifts received through unrestricted bequests which in accordance with the Bylaws of the Board of Regents subsequently are transferred to endowment. Anticipated expenditures in the Special Purpose category include support of studies in ornithology, computer conversion costs, a computer cost center and small amounts used for legal seminars, research, furniture and property taxes. Expenditures for the computer cost center have not been recorded for FY 1986 and FY 1987 which explains the special purpose fund variance between FY 1985 and the subsequent two years.

Restricted Funds - Included in this category are endowment bequests and foundation grants for scientific research publications, general research projects and the forthcoming book, Best Addresses: A Cultural History of Washington, D.C. Apartment Buildings, to be published in FY 1987.

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OFFICE OF DESIGN AND CONSTRUCTION

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
			General		Special Purpose					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1985 Actual	39	1,923	9	329	-	-	-	-	-	-
FY 1986 -Base	35	2,088	9	362	-	-	-	-	-	-
-PL 99-177***		2,009								
FY 1987 Estimate	35	2,123	9	383	-	-	-	-	-	-

* FTE = Full-time equivalent

** FTP = Full-time permanent positions

*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	35	-	35
11 Personnel Compensation	1,468	15	1,483
12 Personnel Benefits	184	2	186
21 Travel	15	1	16
23 Rent, Communications & Utilities	24	1	25
24 Printing & Reproduction	10	-	10
25 Other Services	315	13	328
26 Supplies & Materials	25	1	26
31 Equipment	47	2	49
Total	2,088	35	2,123

Analysis of Increase

Necessary Pay	17
Inflation	18

ABSTRACT - The Office of Design and Construction (ODC) provides professional architectural and engineering services to the Institution in support of the development, operation, maintenance, repair and improvement of the physical plant. Services include short- and long-range planning feasibility analyses, design and engineering studies, project management and development of cost and budgetary estimates. Other services provided by ODC include contract review, preparation and supervision; general construction administration and management; interior design work and space utilization planning; and technical consulting support. No program increase is requested for FY 1987. Necessary pay of $17,000 is required for existing staff and an amount of $18,000 is sought to compensate for the effects of inflation in nonsalary areas of expense.

PROGRAM - The primary functions of the Office of Design and Construction are to provide planning, engineering, architectural and related administrative services for all

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construction, renovation and repair projects for Smithsonian facilities. These are located primarily in the Washington metropolitan area, as well as at the Smithsonian Environmental Research Center in Maryland, the Whipple Observatory in Arizona, the Cooper-Hewitt Museum in New York and the Tropical Research Institute in Panama. ODC's staff includes electrical, mechanical, structural and civil engineers, architects and construction managers, architectural and engineering draftsmen, planners, estimators and administrative support personnel.

The major responsibility of the Office is to administer the Restoration and Renovation of Buildings (R&R) and construction programs by providing technical and professional support that addresses the facilities needs of the Institution in a cost effective manner. The Restoration and Renovation program is designed to bring an aging physical plant up to acceptable levels of safety for visitors and staff and to provide proper environmental conditions for the preservation and maintenance of the National Collections.

Staff services provided by the Office include the preparation of detailed project designs and specifications in support of future year physical plant projects and related budget estimating. In FY 1985, increased emphasis was placed on master planning for Smithsonian facilities. Master plans were initiated for the Tropical Research Institute, the Whipple Observatory, the Silver Hill facility, the Hirshhorn Museum and Sculpture Garden, and the American History and Natural History buildings. With the completion of the master plans, the Institution will be able more effectively to establish priorities to accomplish required work consistent with programmatic needs. The Office conducts architectural and engineering studies of buildings' operating systems; recommends and oversees efforts to solve functional deficiencies; reviews designs prepared by the museums' exhibits staffs to ensure compliance with safety, health, accessibility and other technical standards; prepares, reviews and supervises architectural and engineering design contracts as well as construction contracts; and performs architectural and engineering feasibility studies and analyses.

Expertise also is provided to Smithsonian managers on matters relating to planned construction and facility development or utilization. To support these functions, ODC maintains a central library for cataloguing, filing and identifying all plans, drawings and specifications related to Smithsonian buildings and properties.

In FY 1985, ODC supervised 103 construction contracts. The most prominent among these were: the ongoing exterior renovations and repairs to the Arts and Industries building including roof replacement, cleaning and pointing of the brick, refinishing of stone sills and installation of new energy efficient windows; continued renovation of the facade at the Renwick Gallery (completed in late 1985) including the replacement of all existing sandstone elements that have deteriorated from weathering and age with architectural precast concrete replicas; construction of a new Anacostia Neighborhood Museum annex which will include exhibit, curatorial and administrative spaces as well as increased exhibit production areas; and a major renovation of the basement and third floor of the American History building.

In FY 1986, efforts continue to upgrade the heating, ventilating and air-conditioning (HVAC) systems throughout the Institution's facilities, including a major upgrading of the HVAC systems in the American History and Natural History buildings. The program for the abatement and containment of asbestos in Smithsonian facilities proceeds with primary work being accomplished at the American History, American Art/Portrait Gallery and Cooper-Hewitt buildings. Also in FY 1986, fire protection improvements continue throughout the Institution with efforts directed at the American History, Natural History, Smithsonian, Arts and Industries, American Art/Portrait Gallery, Air and Space, and Renwick Gallery buildings, and at the Silver Hill facility.

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NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These funds are provided by an allotment used primarily to cover salaries and some support costs (estimated expenditures of $362,000 for FY 1986 and $383,000 for FY 1987) as ODC provides services for Trust funded as well as federally funded projects.

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OFFICE OF PROTECTION SERVICES

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS									
	FEDERAL FUNDS		UNRESTRICTED FUNDS				RESTRICTED FUNDS		FEDERAL GRANTS & CONTRACTS	
			General		Special Purpose					
	FTE*	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount	FTP**	Amount
FY 1985 Actual	633	17,116	-	6	-	60	-	-	-	-
FY 1986 -Base	698	18,132	-	7	1	218	-	-	-	-
-PL 99-177***		17,365								
FY 1987 Estimate	741	19,340	-	7	1	243	-	-	-	-

* FTE = Full-time equivalent
** FTP = Full-time permanent positions
*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	698	43	741
11 Personnel Compensation	13,270	893	14,163
12 Personnel Benefits	1,345	115	1,460
21 Travel	50	2	52
22 Transportation of Things	7	-	7
23 Rent, Communications & Utilities	130	5	135
24 Printing & Reproduction	20	1	21
25 Other Services	1,965	82	2,047
26 Supplies & Materials	340	14	354
31 Equipment	1,000	96	1,096
42 Insurance Claims & Indemnities	5	-	5
Total	18,132	1,208	19,340

Analysis of Increase

Necessary Pay	244
Inflation	147
Program Funds	817

ABSTRACT - The Office of Protection Services (OPS) is responsible for the security, fire protection, safety, and health programs of the Smithsonian. For FY 1987, an increase of 21.5 workyears and $420,000 is requested to provide security for the Quadrangle building and grounds. A further amount of 21 workyears and $397,000 is required to annualize the partial year funding for 33 positions approved in FY 1986 for Quadrangle-related support. Necessary pay of $244,000 is required for existing staff and an amount of $147,000 is sought to compensate for the effects of inflation in non-salary areas of expense.

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PROGRAM - The Office of Protection Services is responsible for security, fire protection, safety and health services for visitors and staff of the Smithsonian Institution. The authority of the Office to administer these programs derives from Public Law 82-206 and Public Law 88-391, which relate to the policing of Smithsonian buildings and grounds, and from Public Law 91-596, Public Law 91-616, and Executive Order 12196, which relate to occupational safety and health.

The Office of Protection Services provides a full range of protective services through the efforts of a security force and a professional and administrative staff that includes training specialists, safety specialists, industrial hygienists, fire protection engineers, alarm system specialists, investigators, and museum security specialists. The security force provides physical security 24-hours-a-day, every day of the year, at 13 major museums and art galleries in addition to other major work, research and storage facilities in the Washington, D.C. area, and at the Cooper-Hewitt Museum in New York City. The staff conducts in-depth studies of security needs, escorts shipments of valuable objects, formulates long-range plans for improved security and safety, operates a personnel security program, and installs and maintains alarms, including equipment for the new proprietary security system. The Office provides technical assistance and advisory services and administers occupational safety and health programs for the National Zoological Park, the Smithsonian Tropical Research Institute, the Smithsonian Environmental Research Center, and the Smithsonian Astrophysical Observatory. The Office is responsible for the protection of more than 5,000 Smithsonian employees, millions of visitors each year, the many facilities of the Institution, and the National Collections.

The security force monitors conditions and activities in and around the buildings, enforces museum regulations, and intervenes in case of crime, accident, or other emergency. Uniformed guards, plainclothes and K-9 officers are assigned in the galleries, on the grounds, and at entrances 24-hours-a-day, seven-days-a-week. Activities are coordinated through the use of a radio network. Security officers respond to alarm signals, conduct security and fire patrols after the museum buildings are closed to the public, investigate accidents, report fire and safety hazards, or malfunctions of mechanical and electrical equipment, and provide information to museum visitors. Security arrangements for visits by dignitaries and exhibitions of international interest must be coordinated with and supported by the State Department, the Secret Service, the U.S. Park Police, and other Federal and local agencies. Security coverage is based on the concept of posts--the areas for which security officers are responsible. A post may be one point (for example, a museum entrance) or an area whose boundaries are determined by such factors as its use; crowd conditions; the value of objects on display; the vulnerability of those objects to accidental damage, vandalism, or theft; the effective field of vision of the assigned protection personnel; and the availability of electronic devices. The number of guards required to staff one post may vary from one (for a post staffed eight-hours-a-day, five-days-a-week) to five (for a post staffed 24-hours-a-day, seven-days-a-week). In recent years, OPS has concentrated on reducing the number of thefts committed in Smithsonian facilities by assigning plainclothes officers with intensified training in police methods and security practices in high crime areas, and by thoroughly investigating incidents.

The Office of Protection Services takes pride in and has gained renown in the museum community for the training of museum security officers. The training staff instructs new guards (including K-9), prepares guards for higher level officer positions, and conducts refresher courses for the force. During the past several years, the staff has trained K-9 teams from Fairfax and Loudon Counties and Falls Church, Virginia, Kanawha County, West Virginia, and the Annapolis, Maryland Police Department, as well as guards and guard supervisors from Detroit Institute of Art, Museum of New Mexico, Virginia Museum of Fine Arts, U.S. Air Force Museum, Amon Carter Museum of Art of Fort Worth, High Museum of Art in Atlanta, and National Aquarium of Baltimore. The Office assists the Smithsonian's

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Office of Museum Programs by providing training in security for small museums from across the United States and hosts a large museum security conference which has developed an international audience. For the past several years, OPS has played a lead role in improving security of cultural objects.

A key part of the Institution's security program involves the conversion to an electronic security and fire alarm system completely owned and operated by the Smithsonian. The purposes of converting to a proprietary security system (SIPSS) are to gain faster response time to security and fire protection alarms; to improve the quality and control of information transmitted from the security devices and fire sensors to the building security offices and the central control room; to manage and control systems maintenance; and to eliminate reliance on leased equipment, outside sources of power and related contractual services. The fire detection and security sensors that are elements of this system will be linked to eight local control rooms and to a central room that monitors all alarm activity and provides emergency back-up capability. Computer-controlled closed-circuit televisions will allow the control room operator to assess problems quickly and dispatch patrolling guards to the area of the activated sensor for appropriate action. During FY 1983, the installation of the first phase of the SIPSS was completed at the Museum Support Center in Suitland, Maryland and in FY 1984, in the Central Control Room on The Mall. By the end of 1986, the system will be expanded to all Washington, D.C., area facilities.

The construction of the Museum Support Center (MSC) and the Quadrangle has presented great demands for the design and installation of new security systems. During FY 1984, more than 350 state-of-the-art sensing devices (including 18 closed-circuit television cameras and 47 access card readers) were placed in the MSC. State-of-the-art security technology has been incorporated in the system for the Quadrangle. This system will include 500 security zones and will be controlled by the SIPSS with up to 68 closed-circuit television cameras, 102 card readers, and for the first time the new delay action locking devices permitted by the life safety code to improve security on exit doors without jeopardizing life safety.

Fire and safety programs include training in preventive techniques; reviews of construction, renovation, and exhibition installation drawings; regular fire inspections of facilities; and annual safety and industrial hygiene inspections. These measures have resulted in the development of long-range plans for installation of new and upgraded fire detection and suppression systems and for compliance with safety regulations. Fire safety presentations are made to approximately 80 percent of the Smithsonian staff each year. A safety staff works to eliminate hazards, accidents and occupational illnesses. Locations in which asbestos has been discovered are monitored carefully by industrial hygienists, and projects to remove or contain asbestos and to clean areas and objects found to be contaminated are proceeding on schedule. Employees are provided safety shoes, safety glasses and other equipment as necessary. The safety staff continues to promote safety awareness among employees by coordinating the work of safety committees in every facility and by offering several training programs.

Medical services for employees exposed to health hazards on the job or experiencing other job-related health problems are under the direction of a staff medical officer. In addition to providing first aid for on-the-job injuries to employees, the health services staff continues to develop and implement effective monitoring programs for employees exposed to hazardous conditions, writes medical standards for employees appointed to certain positions, develops a medical monitoring program for underwater diving, and develops a program of pre-employment physical examinations. Programs to counsel employees troubled by alcoholism, drug, or emotional problems are continuing as are programs to provide immunizations for employees traveling on official business, physicals for Smithsonian scientists in the underwater diving program, diagnostic tests for chronic illnesses, and certain treatments ordered by employees' private physicians.

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Health units are staffed so that qualified medical personnel are available to administer first aid when museums are open to the public.

EXPLANATION OF PROGRAM INCREASE - Quadrangle Security (42.5 workyears and $817,000) An increase of 21.5 workyears and $420,000 is sought in FY 1987 for 35 guard positions and a nurse to provide the necessary security and health services for the Quadrangle when it opens to the public. Twenty-nine of these positions will be filled mid-year to coincide with the scheduled public opening of the Quadrangle in the spring of 1987. (Funding for the full-year costs of these positions is anticipated in the FY 1988 budget request.) These positions are essential to provide security coverage for the visitors, staff, collections stored and displayed within the Quadrangle, and exterior buildings and grounds; and health services for staff and visitors. Of this amount, $53,000 is requested for basic security supplies, uniforms, and equipment needed by the staff, to carry out day-to-day operations. A further amount of 21 workyears and $397,000 is required to annualize the partial year funding for 33 positions approved in the FY 1986 budget for Quadrangle-related support.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - These are provided by an allotment and by reimbursements for the use of guard services at special events and lectures at Smithsonian facilities. These funds are used to purchase supplies, materials and equipment.

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OFFICE OF PLANT SERVICES

(Dollars in Thousands)

Fiscal Year	APPLICATION OF FUNDS: FEDERAL FUNDS FTE*	FEDERAL FUNDS Amount	UNRESTRICTED FUNDS: General FTP**	General Amount	Special Purpose FTP**	Special Purpose Amount	RESTRICTED FUNDS FTP**	RESTRICTED FUNDS Amount	FEDERAL GRANTS & CONTRACTS FTP**	FEDERAL GRANTS & CONTRACTS Amount
FY 1985 Actual	419	30,019	7	1,087	7	87	-	7	-	-
FY 1986 -Base	451	32,340	7	1,237	2	21	-	1	-	-
-PL 99-177***		31,013								
FY 1987 Estimate	500	36,402	7	1,343	2	30	-	1	-	-

* FTE = Full-time equivalent
** FTP = Full-time permanent positions
*** Balanced Budget and Emergency Deficit Control Act of 1985

Detail of Federal Funding

	Base FY 1986	Proposed Adjustments	Est. FY 1987
FTE Allocation	451	49	500
11 Personnel Compensation	11,310	1,024	12,334
12 Personnel Benefits	1,424	131	1,555
21 Travel	22	1	23
22 Transportation of Things	2	-	2
23 Rent, Communications & Utilities	16,924	2,570	19,494
24 Printing & Reproduction	12	-	12
25 Other Services	1,361	104	1,465
26 Supplies & Materials	1,008	125	1,133
31 Equipment	277	107	384
Total	32,340	4,062	36,402

Analysis of Increase

Necessary Pay	183
Inflation	112
Program Funds	1,202
Utilities and Rent	2,565

ABSTRACT - The Office of Plant Services (OPlantS) operates, maintains, and repairs 14 museums and art gallery buildings including the Quadrangle, and a number of other work and collections storage areas located in the Washington metropolitan area and in New York City. OPlantS provides utilities, transportation, mail and telephone services as well as exhibits renovation and other essential program services in support of research, exhibition, education and other public programs. In addition, technical services and assistance are provided to other Smithsonian units located outside the Washington metropolitan area including the Tropical Research Institute in Panama, the Cooper-Hewitt Museum in New York, the Whipple Observatory in Arizona and the Environmental Research Center in Maryland. Also included in this line item are the Office of Horticulture, South Group Buildings Management and the Quadrangle Building Management units.

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For FY 1987, a total increase of 21.25 workyears and $624,000 is requested. Of this amount, 3.25 workyears and $114,000 is required to establish repair and maintenance services in the new Quadrangle facilities and 4 workyears and $172,000 is requested to support the installation and perpetual maintenance of the Enid A. Haupt Garden in the Quadrangle. A final sum of 14 workyears and $338,000 is required to fully staff the Quadrangle Building Management Division and to provide necessary supplies, services and equipment required for normal operations. A further amount of 27.5 workyears and $578,000 is required to annualize partial-year funding for 38 positions approved in the FY 1986 budget for Quadrangle-related support in the Office of Plant Services (8 workyears and $215,000 for 11 positions); the Office of Horticulture (1 workyear and $20,000 for 2 positions); and the Quadrangle Building Management Division (18.5 workyears and $343,000 for 25 positions).

Necessary pay of $183,000 is required for existing staff and an amount of $112,000 is sought to compensate for the effects of inflation in nonsalary areas of expense. An amount of $2,565,000 for utilities, postage, rent and communications including amounts attributable to Quadrangle facilities is being requested and justified in the Uncontrollable Increases section of this budget.

PROGRAM - I. Office of Plant Services - With base resources of 363 workyears and $12,827,000 (exclusive of the rent, communications and utilities budgets), the Office of Plant Services operates, maintains and repairs the Smithsonian's physical plant on or near The Mall, including over 5.1 million net usable square feet in museums and art galleries. In addition, OPlantS operates, maintains and repairs 82,000 square feet of space in the Cooper-Hewitt Museum in New York City. Services also are provided to other work and storage areas including the Museum Support Center in Suitland, Maryland, and space in leased facilities. These services include maintenance of building interiors and exteriors; all mechanical and electrical equipment (including elevators and escalators); lighting and refrigeration components; and oversight of emergency property repairs which are accomplished by service contracts. Operational responsibilities for utilities funding and management include the maintenance of large and complex heating, air conditioning, and ventilating systems, and electronic environmental control systems essential for the protection of buildings, specimens, objects, paintings and sculptures. Trade and craft assistance, including carpentry, painting, plumbing, plastering, sheet-metal and electrical work is provided to further research projects, office relocations and modifications, and exhibitions installations and other public events at all museums.

OPlantS also maintains a supply warehouse at the Smithsonian Institution Service Center where heavily used supplies and materials, purchased in bulk to obtain the most favorable price, are received, stored and distributed. Packing, crating, warehousing and moving services for museum objects and collections are also performed by OPlantS. In addition, the Office is responsible for oversight of all communications systems including the management and funding of telephone installations and services (Federal Telecommunications System Network and local calls) and for the processing of mail and monitoring of postage costs. Transportation services, including the maintenance, repair and operation of vehicles, are carried out by the Office as well.

The Computerized Preventive Maintenance System for scheduling preventive maintenance requirements continues to provide for a highly reliable and efficient physical plant operation. The preventive maintenance program schedules periodic maintenance for fire prevention, automatic lighting, guard stations, roofing systems and heating, ventilating, and air conditioning mechanical equipment in all Washington, D.C. museums and the Smithsonian Environmental Research Center near Edgewater, Maryland.

The Computerized Facilities Monitoring System continues to effectively analyze and control the operation of mechanical equipment and monitor environmental conditions in

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major Smithsonian museums. This System uses nearly 1,900 sensors located on equipment components and in areas where stable temperature and humidity controls are essential. The sensors automatically alert a central control center of equipment malfunctions and of deviations from required environmental conditions. These automatic alerts have aided in avoiding costly repairs and in maintaining proper environmental conditions required by the collections.

Accomplishments in FY 1985 included providing trade and craft services (such as electrical, carpentry, plumbing, painting and machinist) in support of 33 exhibit projects for Smithsonian organizations. Some notable exhibitions among these projects were: "Life in America" at the National Museum of American History; "Views of a Vanishing Frontier" and "Maine Coastal Ecosystem Aquarium" at the National Museum of Natural History/Museum of Man; "Praise Poems" and "African Masterpieces From the Musee de l'Homme" at the National Museum of African Art; "LIFE: the Second Decade, 1946-1955" at the National Museum of American Art; "William Edward West 1788-1857, Kentucky Painter" at the National Portrait Gallery; "Anni Albers" at the Renwick Gallery; and "Jim Dine: Five Themes" at the Hirshhorn Museum and Sculpture Garden.

Additionally, in FY 1985 OPlantS was called upon to provide other essential program support services to museums and other Smithsonian organizations. These projects included office modifications to accommodate changing program needs such as converting office to exhibition space; modifications to areas to accommodate installation of scientific and other specialized equipment; and installation and maintenance of environmental control and fire detection and suppression systems and equipment.

II. Office of Horticulture - With base resources of 41 workyears and $1,383,000, the Office of Horticulture applies the disciplines of horticulture as an educational, scientific, research, exhibition, and display activity for the Smithsonian Institution. The Office provides horticultural services to all museums, including interior and exterior landscape management from design through installation in addition to maintenance; research and development of historically styled gardens for museum grounds and special exhibitions; interior plantscapes; management of grounds around museums; and operation of a large greenhouse-nursery complex. Responsibilities of the Office also include exterior buildings and grounds pest control; snow and ice removal from sidewalks, roadways, parking lots and docks in locations on and off The Mall; and trash policing of grounds.

III. South Group Buildings Management - With base resources of 41 workyears and $1,019,000, South Group Buildings Management is responsible for the general repair and maintenance of the Arts and Industries and Smithsonian Institution Buildings. Included in these responsibilities are cleaning; minor maintenance; labor services; relamping; craft services; shipping and receiving; special events preparation; contract coordination for maintenance, trash removal and pest control; and renovation projects.

IV. Quadrangle Building Management - With funding of 6 workyears and $159,000 provided in FY 1986, the Quadrangle Building Management was established to provide a wide variety of support services to all organizations to be located in the new facility. These services will include shipping and receiving, custodial, minor maintenance, relamping and other services.

EXPLANATION OF PROGRAM INCREASE - For FY 1987, a total increase of 21.25 workyears and $624,000 is requested. Of this amount, 3.25 workyears and $114,000 is required to establish repair and maintenance services in the new Quadrangle facilities. Also, an amount of 4 workyears and $172,000 is requested to support the installation and perpetual maintenance of the Enid A. Haupt Garden in the Quadrangle. An additional sum of 14 workyears and $338,000 is required to fully staff the Quadrangle Building Management Division and to provide necessary supplies, services and equipment required for normal

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operations. An amount of $2,565,000 for utilities, postage, rent and communications including amounts for the Quadrangle facility is being requested and justified in the Uncontrollable Increases section of this budget.

A further amount of 27.5 workyears and $578,000 is required to annualize partial-year funding for 38 positions approved in the FY 1986 budget for Quadrangle-related support in the Office of Plant Services (8 workyears and $215,000 for 11 positions); the Office of Horticulture (1 workyear and $20,000 for 2 positions); and the Quadrangle Building Management Division (18.5 workyears and $343,000 for 25 positions).

OPlantS - Quadrangle Facilities Maintenance and Repair (11.25 workyears and $329,000) - For FY 1987, an increase of 11.25 workyears and $329,000 is required to provide trade and craft personnel necessary to operate, maintain and repair the complex mechanical, electrical, heating, ventilating and air conditioning (HVAC) equipment installed in the Quadrangle and to provide mail delivery, sorting and distributing services to the organizations located in the facility.

Of this total, an amount of 2.25 workyears and $69,000 is requested to hire an electrician, a plumber and a painter. These positions will be filled in January 1987 to prepare for public opening of the Quadrangle in mid-1987. (Funding for full-year costs of these positions is anticipated in the FY 1988 budget request.) These positions are essential to ensure timely maintenance and repairs to building utilities systems including all plumbing and electrical systems installed throughout the Quadrangle facility. One workyear and $13,000 is needed to hire a full-time permanent mail clerk to receive, sort and distribute mail to the organizations located in the Quadrangle. A sum of $30,000 also is sought to purchase safety shoes, uniforms, hand tools, maintenance supplies, materials and service contracts to support this essential physical plant work. A further amount of 8 workyears and $215,000 is required to annualize the partial-year funding for 11 positions approved in the FY 1986 budget for Quadrangle-related support.

Horticulture - Quadrangle Gardens (5 workyears and $192,000) - An increase of 5 workyears and $192,000 is requested to support the installation and perpetual maintenance of the Enid A. Haupt Garden located in the Quadrangle. This garden will encompass 4.2 acres and will require the utmost care to maintain the abundant plant types and elaborate landscapes.

The garden area will consist of three distinctly different types of gardens--the center will be in a Victorian style and will be flanked by Oriental and Persian gardens. The Victorian style garden will include elaborate parterres which require weekly edging and trimming; the Oriental and Persian gardens will consist of specimen plantings, rock work and water features. An amount of 2 workyears and $76,000 will be required to fund gardener/arborist positions to care for the live collection of rare plants, large trees and shrubs.

An amount of 1 workyear and $38,000 is required to provide maintenance of the interior plants located in the entrance pavilions, reception areas and museum galleries. These plants will require regular rotation, watering, feeding, trimming, and removal of damaged or dead leaves. The interior plant program will improve the esthetic appearance of the museums and galleries and will relieve the subterranean feeling engendered by the underground location of the Quadrangle complex. Interior plants are being chosen to reflect native plants of each museum's discipline--such as plants of African and Eastern origin. All plants will be rotated to and from the greenhouse-nursery complex located at the United States Soldiers' and Airmen's Home (USSAH).

With the completion of the Quadrangle, the Office of Horticulture will be responsible for providing 100,000 seasonal annuals for parterres, urns, hanging baskets;

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providing tropical specimens of African and Eastern origin; and grooming plants for exhibitions in the new Quadrangle complex. An increase of $20,000 is requested to erect four Victorian Greenhouses accepted as a gift in FY 1984. In order to support properly the Enid A. Haupt Garden, additional greenhouse space is necessary. Approval has been obtained to erect this type of building on land at USSAH. These buildings would make available 5,000 square feet of additional growing space. An amount of 1 workyear and $38,000 is requested to provide a position that will maintain these four greenhouses and provide the necessary plants for the Enid A. Haupt Garden.

A further amount of 1 workyear and $20,000 is required to annualize the partial-year funding for 2 positions approved in the FY 1986 budget for Quadrangle-related support.

Quadrangle - Building Management Division (32.5 workyears and $681,000) - For FY 1987, an amount of 32.5 workyears and $681,000 is required to fully staff the Quadrangle Building Management Division; to provide supplies, services and equipment necessary for the day-to-day support services to all organizations located in the Quadrangle; and to establish an automated system to manage personnel resources, inventory control and budget projections.

In mid-1987, the Quadrangle will open to the public. Three major inaugural exhibitions are expected to generate heavy public visitation. The third level of the building will be in full operation as early as the summer of 1986, and will house the Smithsonian Institution Traveling Exhibition Service, Resident Associate and National Associate Programs and the International Center. These organizations with their programs, lectures, classes, seminars and receptions will require constant attention from the Building Management Division during the day as well as late into the evenings seven days a week. An amount of 14 workyears and $218,000 is requested to hire 19 new positions in FY 1987 for the Building Management staff. Also, an amount of $110,000 is requested to purchase supplies, uniforms, safety shoes, equipment and tools to enable the staff to perform assigned tasks ($55,000); to purchase special mobile maintenance equipment required to reach 25-foot ceiling skylights and interior windows, and loading dock equipment required to move art objects ($45,000); and to provide training for wage employees on improvements in maintenance and custodial techniques, uses of new supplies and equipment and training of managers and office staff on automated management systems ($10,000).

A sum of $10,000 is requested to establish a system to automate office functions such as budget and personnel projections, personnel scheduling, inventory control, preventive maintenance and loading dock scheduling. Funds will be used to purchase personal computers and software.

A further amount of 18.5 workyears and $343,000 is required to annualize the partial-year funding of 25 positions approved in the FY 1986 budget for Quadrangle-related support.

NONAPPROPRIATED SOURCES OF FUNDING:

Unrestricted General and Special Purpose Funds - Unrestricted Trust funds are provided by allotments and are used primarily to cover salaries and support costs of seven full-time positions in the Office of Plant Services (estimated expenditures of $260,000 in FY 1986 and $298,000 in FY 1987) and to provide for the payment of the Trust fund share (40 percent) of the Smithsonian's annual costs for the use of the Federal Telecommunications System Network and for the Trust fund share of space rental costs for administrative activities located in L'Enfant Plaza (estimated expenditures of $969,000 in FY 1986 and $1,036,000 in FY 1987). Special Purpose funds are provided through reimbursements primarily from Trust-funded client organizations as for support services rendered. These amounts are used to purchase supplies, services, equipment and landscaping materials.

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MUSEUM PROGRAMS AND RELATED RESEARCH
(SPECIAL FOREIGN CURRENCY PROGRAM)

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SMITHSONIAN INSTITUTION
MUSEUM PROGRAMS AND RELATED RESEARCH
(SPECIAL FOREIGN CURRENCY PROGRAM)

1985 Appropriation	$8,820,000	Equivalent in Excess Foreign Currencies
1986 Appropriation	$2,485,000	
PL 99-177 (Balanced Budget & Emergency Deficit Control Act of 1985)	$2,378,000	
1987 Estimate	$ -0-	

Since 1966, the Smithsonian Institution has maintained a program using foreign currencies which have been determined by the Treasury Department to be in excess of the normal needs of the United States. The Smithsonian Institution's Special Foreign Currency Program makes grants to United States universities, museums, and other institutions of higher learning, including the Smithsonian itself, primarily for research and advanced professional training in fields of traditional Smithsonian competence.

The FY 1986 appropriation will be used to continue a program of grants to United States institutions for research in those countries where excess local currencies are available and to provide the last of four contributions to the campaign to salvage the city of Moenjodaro in Pakistan. No funds are requested in FY 1987.

PROGRAM OF GRANTS FOR RESEARCH

The Smithsonian program is a major source of excess foreign currency support for research carried out by United States institutions in the excess currency countries (in FY 1986 Burma, Guinea, Pakistan and Poland are so designated) and is distinguished from other special foreign currency programs in that the full responsibility for the design, execution and publication of research results rests with a scholar working within the program of a United States institution. Smithsonian foreign currency grants strengthen the research and training activities of collaborating institutions abroad, since most projects directly involve host country institutions and scholars. Enduring professional ties, which result from joint efforts and scholarly exchange, contribute to the strongest form of United States cultural relations with other nations. Also, these ties contribute to the integration of the worldwide advancement of science which serves to narrow the gap between the industrial and the developing nations.

In FY 1985, grants supported the following projects of special interest:

U.S. scholars combined the multidisciplinary skills of anthropology, history, political science and economics in observing the 1984-1985 elections in India, the world's largest democracy.

Recent study of the ritual arts of the Baga of Guinea is suggesting a tentative revision of previous interpretations of Baga religious systems.

New models for the study of the molecular evolution of gravitationally contracting clouds have been developed in a collaboration between United States and Indian scientists.

United States museum specialists conducted workshops in Pakistan on conservation awareness and preventive care of collections.

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Further, with emphasis on information exchange through small workshops, symposia and field conferences, the Smithsonian is encouraging international research in specialized areas. In FY 1985, for example, United States scholars received support for participation in exchanges on the subjects of American studies, women in development, environmental education, Buddhist studies, geophysics, food systems and communication structures, and economic change in South Asia.

The Importance of Multiyear Grants

Beginning in FY 1979, the Smithsonian Foreign Currency Program began a policy of multiyear funding of major programs whenever sufficient funds were available. Such funding is important because rational planning requires the advance commitment of professors' and graduate students' time as well as facilities. Multiyear grants, with annual disbursements subject to satisfactory review of progress by the advisory councils, allow participating institutions to coordinate such projects into their long-range scholarly programs, by providing some assurance of funding for the duration of the project.

Further, the Smithsonian has been able to use multiyear grants to protect successful projects from sudden termination when excess currency accounts were exhausted abruptly. This happened in Poland and Tunisia in 1976 and in Egypt in 1981. With multiyear funding over a three-year period, ten projects in Egypt were funded to reasonable conclusions and three continuing projects gained sufficient time to seek other funding sources. In FY 1985, the last year of Indian funds, several ongoing projects were multiyear-funded to ensure completion. Also, to safeguard ongoing projects in current countries, multiyear grants will be made as possible in FY 1986.

Benefits to United States Institutions

Since the inception of the program in FY 1966, Smithsonian grants have been made to 247 United States institutions in 42 states, Puerto Rico, and the District of Columbia to support more than 850 individual projects. Publications known to have resulted from program grants totaled more than 1,430 to date and more than 100 collections of biological and cultural materials acquired in the course of field work have been placed in U.S. and host country institutions.

The advantages of the program have extended to a far greater number of institutions than the 247 United States institutions which have received grants directly. For example, three of the grantee institutions are consortia of United States scholarly institutions. They are the American Institute of Indian Studies (AIIS) in Chicago, Illinois, with 40 institutional members; the American Research Center in Egypt (ARCE) in New York City, with 27 institutional and approximately 600 individual members; and the American Schools of Oriental Research (ASOR) in Cambridge, Massachusetts, with 135 member institutions.

Smithsonian grants have supported the research in India of 630 AIIS fellows over the 18-year period from FY 1968 through FY 1985. Program grants also have supported more than 80 ARCE projects from FY 1966 through FY 1985, and since FY 1977, 85 ARCE fellows have received Smithsonian support. Nine ASOR excavations in Israel and Tunisia provided research opportunities for more than 260 senior United States scholars and field training for more than 324 graduate students. The Indo-American Fellowship Program, initiated in FY 1977 under the auspices of the Indo-U.S. Subcommission on Education and Culture, has sent more than 80 scholars from United States institutions to India.

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Scientific Review Under the Smithsonian Program

The Smithsonian program considers proposals from any qualified American institution for research in fields of traditional Smithsonian competence. The program seeks the advice of experts in the specific area of sciences to be studied in reviewing the proposals and annually convenes advisory councils of senior scholars from across the Nation. Following the recommendation in the House-Senate Conference Report 95-1672 dated September 29, 1978, the National Science Foundation reviews the credentials of the members of the advisory councils and certifies their competence. The councils discuss and evaluate the proposals, taking into consideration the experts' opinions, and provide specific advice to the Smithsonian regarding the selection of proposals recommended for support and the priorities among them.

An annual review of a grantee's scientific progress is made by the advisory councils before another year of funding is approved. In addition, Smithsonian staff scientists and program advisory council members make onsite visits when firsthand reports are considered necessary. Smithsonian policy requires that grantees publish scientific results and that scientific collections be readily accessible to the scholarly community.

Foreign currency awards to other institutions are executed as normal Federal contracts, with the American grantee institutions providing for full fiscal accountability. The Smithsonian audits each grantee's periodic financial reports and where grantees maintain records abroad, conducts site audits to ensure that appropriate accounting procedures are followed.

The Importance to the Smithsonian of Awards for Research

Access to funds for independent research is an essential factor in enabling the Smithsonian to attract and retain leading researchers and thereby to maintain a standard of excellence as a research institution. In this context, the Institution's initial request in FY 1966 for an appropriation of excess foreign currencies made it clear that Smithsonian scholars would compete for these funds. The appropriation justification in that year stated that the Institution would "...award and administer foreign currency grants...for maximum benefit of all participating institutions, as well as the Smithsonian." This appropriation has provided Smithsonian scientists an opportunity to pursue new and innovative research. Under the Special Foreign Currency Program guidelines, Smithsonian proposals are subject to the same review process as are proposals from outside institutions.

FORWARD-FUNDED RESERVE FOR THE AMERICAN INSTITUTE OF INDIAN STUDIES

Since 1967, the Smithsonian has provided annual funding through the Special Foreign Currency Program to the American Institute of Indian Studies for fellowships, research, symposia and publications and for administrative costs. The Smithsonian has helped sustain this Institute and other American research centers abroad for more than a decade because of their significant contributions to scholarship and science without regard for national boundaries and their special service to American scholars conducting research.

To prevent the sudden termination of the programs of the American Institute of Indian Studies after the removal of India from the excess currency list and to provide interim funding for AIIS for a period after the end of excess currency status, appropriations provided in FY 1980 through FY 1985 allowed the establishment of a forward-funded reserve for the American Institute of Indian Studies. The reserve o $7,170,000 equivalent in rupees was maintained intact through FY 1985. Beginning in FY 1986, with the Indian rupee removed from the excess currency list, the Smithsonian

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will apply funds from the reserve towards the AIIS fellowship program and administration costs in India. Annual proposals will be examined through the Smithsonian's peer review system before each yearly increment is released from the reserve account.

INTERNATIONAL EFFORT TO SALVAGE MOENJODARO

In FY 1986, the Smithsonian will provide the fourth and final increment of the United States contribution to the international effort to salvage the city of Moenjodaro in Pakistan, bringing the total contribution to $4 million in nonconvertible Pakistani currency. Moenjodaro, discovered in the Indus Valley in 1921, apparently was the product of the Harappan civilization which flourished over 4,500 years ago (from about 3000 B.C. to 1500 B.C.). From the standpoint of planning, sanitation and social organization, Moenjodaro anticipated developments which only blossomed several thousand years later.

The excavated ruins at Moenjodaro have been threatened since their discovery: floods of the Indus River and highly saline ground waters have caused the serious deterioration of the excavated remains. In the 1960s, the Government of Pakistan appealed to the international community for assistance in salvaging the city by diverting the river, lowering the water table, providing remedial action to stabilize threatened buildings and preventing disintegration of those that have not yet been seriously damaged, and installing appropriate landscaping. In 1974, UNESCO agreed to lead the international fund-raising campaign. Approximately $9,300,000 has been raised so far, mainly from governmental contributions from UNESCO member states and the Government of Pakistan. The total budget for the project is now estimated to cost over $19 million.

The project, long in the planning stage, is under way, with a ground water control scheme now in place. The construction of the tube wells for lowering the level of the water table to preserve the remaining structures and landscaping has begun. Salt-tolerant plants will be planted for erosion control and to provide suitable protection from wind-driven sands. Work on diverting the Indus River commenced in March 1985.

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FACILITIES PLANNING, RENOVATION, RESTORATION, AND CONSTRUCTION

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CONSTRUCTION AND IMPROVEMENTS
NATIONAL ZOOLOGICAL PARK

1985	Appropriation	$4,851,000
1986	Appropriation	$5,518,000
	PL 99-177 (Balanced Budget & Emergency Deficit Control Act of 1985)	$5,281,000
1987	Estimate	$4,851,000

This appropriation is for use at the National Zoological Park for repairs, alterations and improvements to the plant property, and for the construction of additions to existing facilities and minor new facilities including exhibits; to prepare plans and specifications for construction; and to perform renovations, restorations and new construction for implementing the Master Plan approved by the Commission of Fine Arts and the National Capital Planning Commission in FY 1973. The Zoo's facilities include 163 acres in the Rock Creek Valley of Washington, D. C., and a 3,150-acre Conservation and Research Center located in Front Royal, Virginia. Construction and improvements are accomplished primarily by contract except in instances when suitable contractors cannot be located or their estimates are above acceptable cost levels in relation to proposed work. In such cases, accomplishment of the work by other means, such as the purchase of supplies, materials and equipment and the use of current staff or temporary labor, is the most economical alternative. Furthermore, occasionally it is necessary to fund other related expenses from this account, particularly those associated with the displacement of animals as a result of the construction program or major grounds maintenance in repair of storm damage.

Status of the Construction Program - The National Zoological Park was established in 1890 under the Board of Regents of the Smithsonian Institution, which was authorized to "administer and improve the Zoo for the advancement of science and instruction and recreation of public" (20 U.S.C. 81). The Zoo administers two permanent facilities. Exhibition and educational functions have been centered since 1890 on 163 acres in Rock Creek Valley of Washington, D. C. Complementary animal conservation and breeding functions have been conducted since 1975 on the 3,150-acre site in Front Royal.

The National Zoo's Rock Creek facilities have been undergoing major renovations and improvements since FY 1974 through implementation of the Master Plan. With the transfer of selected and critical animal breeding functions to Front Royal, the elimination of costly projects and the scaling down of others, the total Rock Creek Master Plan program has been reduced from an original plan of 41 major projects and an estimate of $118,000,000 to less than 30 projects and a current estimate of $81,090,000. The total $44,018,000 appropriated through FY 1986 has been spent on 27 new exhibits and support facilities. During FY 1985, a revised Master Plan was developed that incorporated changes in exhibit concepts as they have evolved during the past decade. The revised Master Plan will place the Park among the world's finest zoos.

With funds appropriated in FY 1986, the Zoo will complete the design of Phase II of the Aquatic Exhibits and will construct a 17,000 square foot hospital facility at Rock Creek. The hospital will be designed around a large operating room/surgery with adjoining recovery rooms.

For FY 1987, an amount of $4,851,000 is requested to support projects at the two sites operated by the National Zoological Park.

--Research Facility ($2,500,000) - With the construction of a new hospital facility at Rock Creek, the Zoo will renovate the approximately 17-year old hospital and research

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building into a modern research facility. The renovation will provide the Zoo with a first rate research facility including five environmentally controlled animal holding rooms; animal support areas; research support areas and staff offices. The animal holding areas will have individual room controls for temperature, light and humidity that can mimic diurnal cycles. The animal support area will have a large, walk-in cooler for storage of perishable produce and a large well ventilated substrate storage area for dry food. The research support area will house eight environmental chambers that will have a temperature range of zero degrees centigrade to 60 degrees centigrade, humidity control, separate water supplies, floor drains, electrical hook-ups and observation ports. The renovation of the research facility is scheduled to begin in early FY 1987 with a completion date of early FY 1988.

--Entranceway and Olmsted Walk - Phase II ($600,000) - An amount of $600,000 is requested for the renovation and improvement of the section of Olmsted Walk from the Connecticut Avenue entrance to the hardy hoofed stock exhibit just below the Education Building. This is the second phase of a three year program which started in 1985. Planned for this phase is an activity plaza with an information kiosk adjacent to the Education Building. Areas that house the sable antelope, bongo and dorcas gazelle exhibits, which front on the walkway, will be reconfigured to increase the size of the yard and bring the exhibit edge up to Olmsted Walk. New curbing, bench niches, landscaping and drinking fountains will be added along the walk. Completion of all three phases of Olmsted Walk will provide a coordinated walkway system from Connecticut Avenue to Rock Creek, tying together all the major animal exhibits and buildings into one pleasant visitor experience.

--Renovations Repairs and Improvements: Rock Creek ($1,400,000) - An amount of $1,400,000 is requested to continue the program of renovation, repairs and preventive maintenance of existing facilities at Rock Creek where there are over 60 facilities of varying age, and 163 acres of land containing over 18 miles of heavily used paths and roadways. The pedestrian paths and vehicle roadways require regular maintenance in order to prevent future more costly repairs. Renovation, repairs and improvement funds also are used to complete emergency repairs to mechanical, electrical, plumbing and support systems, animal exhibits and housing; and to pay for the temporary relocation of animals during the time when repairs are being done. Safety of visitors and employees is a major consideration in the operation of a zoo and this can be assured only by the most rigorous maintenance of exhibits and other facilities.

--Renovation, Repairs and Improvements: Front Royal ($351,000) - An amount of $351,000 is requested to continue the program of renovation and repair of existing facilities at the Conservation and Research Center at Front Royal. The Conservation and Research Center includes 89 facilities of various types containing approximately 236,000 square feet of space, two and one-half miles of paved roads, 20 miles of jeep trails, and 30 miles of fences, all of which must be maintained. Funds also will be used for upgrading the Center's utility systems.

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RESTORATION AND RENOVATION OF BUILDINGS

1985 Appropriation.....$13,475,000

1986 Appropriation.....$11,009,000
PL 99-177 (Balanced Budget & Emergency Deficit Control Act of 1985).....$10,536,000

1987 Estimate.....$12,828,000

The Restoration and Renovation of Buildings (R & R) account is used to finance repairs, alterations and improvements to Smithsonian facilities. (The repairs and renovations at the National Zoological Park are presented separately in this budget submission.)

Smithsonian facilities are comprised of over 4 million square feet of building space located in 14 museum and gallery buildings (including the Quadrangle, now under construction) in Washington, D. C. and New York City, housing research and collections management activities and a wide range of exhibitions in the fields of science, history, technology and art. In addition, the Institution operates and maintains preservation, storage, aircraft and spacecraft display facilities, and the Museum Support Center, at Suitland, Maryland; centers for biological research, conservation and education in Panama and on the Chesapeake Bay near Edgewater, Maryland; a center for astrophysics in Cambridge, Massachusetts; and the Whipple Observatory on Mt. Hopkins in Arizona. These facilities range in age from new to 130 years old.

The Smithsonian's request of $12,828,000 for FY 1987, reflects efforts to plan the orderly completion of a number of major initiatives begun in previous years to better the conditions of existing facilities and to provide creative solutions to future facilities' requirements. The emphasis in this budget, and in future year budgets, will be on restoring and renovating building exteriors, improving fire detection and suppression capabilities, implementing energy conservation measures, improving environmental conditions in the museums, and altering or constructing space to meet the Institution's present and future programmatic requirements. In addition, funds sought in this budget will continue a wide range of ongoing essential repair and improvement projects.

The FY 1987 request for $12,828,000 is an increase of $1,819,000 over the Congressionally approved FY 1986 R & R appropriation and represents the Institution's commitment to establish the necessary level of annual funding for this account in consideration of the size, diversity, age, condition and character of the Smithsonian facilities. The justification for this year's budget request follows:

1.	General repairs and improvements	$ 570,000
2.	Facade, roof and terrace repairs	2,850,000
3.	Fire detection and suppression systems	1,210,000
4.	Access for the disabled, safety and security, and correction of hazardous conditions	630,000
5.	Utility systems repairs and improvements	1,880,000
6.	Other projects	5,688,000
	TOTAL	$12,828,000

GENERAL REPAIRS AND IMPROVEMENTS ($570,000): Funds requested in this category support a wide variety of projects that do not lend themselves to discrete categorizations;

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they also support minor unscheduled, but essential, repairs that cannot be anticipated specifically. Examples of projects include unforeseeable repairs or replacements of building systems or components which fail unexpectedly; modifications to create additional or more effective space for program activities; renovations of exhibition and other public spaces; and ongoing repairs to facilities and support systems.

For FY 1987, an amount of $570,000 is requested of which $450,000 is designated primarily for emergency repairs and $120,000 is sought for minor repairs at off-Mall facilities such as plumbing, electrical, lighting, and floor and wall repairs. An amount of $50,000 is required for repairs to the sidewalks and parking lots associated with the Mall buildings to eliminate hazards to the public and staff. A further sum of $100,000 is requested for repairs and improvements to the roads serving the Smithsonian Environmental Research Center (SERC) near Edgewater, Maryland, and the Whipple Observatory near Amado, Arizona. Funds requested in FY 1987 for SERC ($50,000) will be used to resurface the parking lot by the calf barn and pave the Visitor Center parking lot. The road improvement project at SERC will be initiated with funds received in FY 1986 ($100,000) for resurfacing the road from the back gate to the central area, stabilizing and resurfacing the entrance road to the main intersection, enlarging the turning space at the main gate and at the intersection of Countee Wharf Road and the road to the wharf to accommodate large vehicles, and graveling the road to the wharf. Additional amounts are expected to be sought in future years to resurface and improve other roads and parking areas at this facility. Funds requested for the Whipple Observatory road improvements ($50,000) will provide for necessary continuing repairs to the dirt road leading from the base camp to Mt. Hopkins, which is subject to continual deterioration due to heavy use by Smithsonian vehicles and extreme weather conditions. Continued funding is expected to be requested in future budgets to maintain the road. An amount of $250,000 is requested for improvement of attic space at the American Art and Portrait Gallery Building to provide needed storage for paintings and sculpture acquired by the National Museum of American Art in recent years. The fourth floor attic space on the G Street side of the Building is presently unusable for this purpose because of ductwork occupying the floor space. The ducts will be relocated and partitioning, lighting, insulation and climate control will be provided so that the space may be used to store collections. Although future plans for this Building and the General Post Office Building will provide additional storage space, creation of this space is urgently needed to solve immediate problems of overcrowding of the collections, and is part of the long-range solution to be provided by renovation of the buildings as well.

FACADE, ROOF AND TERRACE REPAIRS ($2,850,000): Maintaining the integrity of the exteriors of all Smithsonian buildings is critical to prevent major structural damage and deterioration due to age and weathering and to ensure a safe environment for visitors, staff and collections. Energy conservation also demands weathertight exteriors. Work in this category includes a variety of major projects that must be accomplished periodically according to the life cycles of the materials used. For example, roof replacements are needed about every 20 years; facade joints must be recaulked and repointed about every ten years; and window frames and other exterior trim should be repainted every five years. Several Smithsonian buildings require large-scale renovation, and work is under way to assure that in the future adequate protection of the exteriors of these buildings can be provided through a preventive maintenance and repair program.

For FY 1987, a total of $2,850,000 is requested to continue, complete and initiate essential roof, facade and plaza projects at three Smithsonian museums and at several buildings at the Suitland storage facility. The amount of $2,500,000 will complete the multiyear roof and facade project at the Arts and Industries Building; $200,000 will be used to repair the facade of the Air and Space Building; $80,000 is required to begin replacement of the plaza at the Air and Space Building; $40,000 will be used to continue the replacement of deteriorated stones at the Smithsonian Institution Building; and $30,000 is required for exterior maintenance of five buildings at the Paul E. Garber storage facility in Suitland, Maryland.

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Work has been completed on the renovation of the facade of the 120-year-old Renwick Gallery Building. The amount of $5.95 million appropriated through FY 1985 provided the resources to complete this project successfully in late 1985.

The exterior renovation of the Arts and Industries Building is also proceeding well. Funds in the amount of $2,500,000 will be required in FY 1987 in order to complete the project, assuring watertightness, energy efficiency and restoration of original architectural features. Funds of approximately $1.25 million were appropriated in FY 1977 and FY 1978 for the first phase of exterior renovation work. These were applied toward replacing the roofs of the courts, four halls and rotunda; repairing rotunda and hall windows; replacing gutters and downspouts; repainting the most deteriorated areas; and other related repairs. With $225,000 appropriated in FY 1980, the Institution contracted for professional architectural/engineering services to provide the necessary analysis, documentation, cost estimates, detailed drawings and specifications for the remaining work. Funds of $8.9 million, appropriated from fiscal years 1981 through 1985, are being used to continue the exterior restoration on a quadrant-by-quadrant basis. For example, amounts provided from FY 1982 through FY 1984 were used to restore the northwest quadrant, the west facade, the southeast and northeast pavilions, the southeast quadrant and east towers. The sum of $2.5 million appropriated in FY 1985 is being used to restore the northeast quadrant, north entry and south towers. An amount of $1.5 million appropriated in FY 1986 will be used to restore the southeast quadrant, including demolition and restoration of the east facade of the southeast quadrant. An amount of $2,500,000 is sought in FY 1987 to restore the southwest quadrant; this will complete the entire project. Restoration work includes the removal and replacement of existing (range, pavilion and tower) roofing, flashing and underlayment; removal of abandoned or nonoriginal elements, such as skylights, roof vents, exhaust ducts and mechanical equipment; and the repair, relocation or replacement of the roof drainage and guttering systems. Other major aspects of the project include replacement and improvements to window components (frames, sashes, glazing, painting, weather stripping and hardware) and the incorporation of an electronic security system; the provision for fire exit windows; the reconstruction, cleaning and repointing of exterior masonry; the removal of nonoriginal equipment located on the facade of the building (such as window air conditioning units, exhaust fans and steam pipes); and the restoration of some of the Building's original elements (such as lighting standards at the entrances, cast iron gates and ornamental metal). Exterior restoration is scheduled for completion in late 1987, at a total estimated cost of $14.4 million.

For the Air and Space Building, the sum of $200,000 is requested to begin repair of the facade, now subject to water intrusion in a number of areas. This water seepage is caused by deterioration of the caulking between the stones of the facade and requires immediate attention to avoid more extensive interior damage. The work will involve the phased replacement of the caulking and will be coordinated closely with the plaza replacement project in order to maintain public access to the Building. An amount of $650,000 is expected to be required in future years to complete this work.

The plaza of the Air and Space Museum has deteriorated greatly since the Building's construction ten years ago. Shifting and broken pavers cause severe safety problems for visitors and staff and require continual maintenance. The Institution plans to replace the concrete pavers with granite pavers which would have an indefinite life span and require little maintenance. This solution would also be consistent with the design of the Building. Replacement of the plaza will provide an opportunity to correct defects in the waterproofing system above the structural deck over the garage. An amount of $80,000 is requested in FY 1987 to begin design. Funding in excess of $3.0 million is expected to be required in future years to complete this project, which will be done in phases to preserve access routes to the Museum.

An amount of $70,000 is requested in FY 1987 for two smaller projects. The sum of $40,000 is needed to continue the phased replacement of deteriorated stones in the facade

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of the Smithsonian Institution Building; and $30,000 is required for repairs and preservative coating on the metal roofs of Buildings 7, 10, 20, 21 and 24 at the Paul E. Garber Facility in Suitland, Maryland.

FIRE DETECTION AND SUPPRESSION SYSTEMS ($1,210,000): The Institution is continuing to upgrade fire protection systems in all buildings to provide the highest level of safety consistent with today's standards and technology. Work includes the installation of heat and smoke detection systems; sprinkler and chemical suppression systems; fire doors and walls; and the improvement of exit capability, particularly in older buildings. Improved systems are also installed as exhibitions are changed and as other modification projects proceed.

For FY 1987, a total of $1,210,000 is requested to continue the implementation of fire protection master plans at the Natural History Building ($175,000) and the American History Building ($250,000), and to begin implementation of master plans at the Air and Space Building ($100,000) and the Smithsonian Institution Building ($225,000); to install sprinkler and smoke detection systems in the Arts and Industries Building ($200,000); and to make fire protection improvements at the Renwick Gallery Building ($50,000), at the Hirshhorn Building ($110,000) and in the buildings of the Tropical Research Institute on Barro Colorado Island in Panama ($100,000).

The Institution continues to place the highest priority on completion of implementation of fire protection master plans at the Natural History and American History Buildings, which together represent the largest areas with the least fire protection.

At the Natural History Building, steady progress has been made in implementing the fire protection master plan developed in FY 1979. Funds appropriated from FY 1979 through FY 1984 ($2,075,000) have been used to complete construction on the sprinkler and smoke detection systems for the east and west wings and portions of the main building; install a master fire control panel; and provide an upgraded and interconnected fire main and riser distribution system for the Building's sprinkler systems. Construction has begun on the installation of smoke detectors and sprinklers throughout the third floor of the main building. Funds in the amount of $500,000 appropriated in FY 1985 are being used to provide safe flammable liquid storage rooms and to separate the West Court from the main building with fire walls. An amount of $300,000 received in FY 1986 will be used to continue projects begun in FY 1985, and to provide new fire alarm pull stations and integrate the smoke detection, sprinkler and alarm systems into the computer system in the master control room. The sum of $175,000 requested in FY 1987 will be used to upgrade the fire rating of access from the public areas of the main building into the wings; replace electric locks on perimeter doors with failsafe locks meeting Life Safety Codes; separate the Rotunda from the rest of the Building with fire-rated doors; provide two-hour fire separation between the main building and the wings; and install fire doors and partition systems in several other locations. It is expected that $1.6 million will be required in future years to continue the fire protection master plan work at the Natural History Building.

The fire protection master plan for the American History Building outlines phased improvements similar to those under way or planned for the Natural History Building, including upgrading and/or adding sprinkler and detection systems; upgrading the existing emergency power supply and distribution systems; upgrading the fire pumps; installing a new fire alarm system; and undertaking architectural modifications to improve the efficiency of fire zones and exit capabilities. With funds of $1.265 million appropriated in FY 1980 through FY 1984, the fire protection master plan was completed; fire wall separations were designed for the first floor and installed on the west side; a new ten-inch water main from the street to the Building and sprinkler risers throughout the Building were designed and installed; a master alarm control panel and electrical trunk lines for smoke detection systems and sprinkler annunciation alarms were designed and installed;

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and additional automatic sprinkler and smoke detection systems are being installed throughout two-thirds of the basement level. Funds appropriated in FY 1985 ($200,000) and in FY 1986 ($300,000) will be used to install fire protection systems on the fourth floor, including installation of sprinkler and smoke detection systems and fire pull stations; removal of existing heat detectors; and installation of an emergency generator. The amount of $250,000 requested in FY 1987 will be used to install sprinkler and smoke detection systems and fire pull stations in the central part of the Building. It is expected that an amount of $2.0 million will be required in future years to continue implementation of the fire protection master plan at the American History Building.

Over the past several years, some sprinklers and smoke detection systems have been installed in the Air and Space Building in areas considered most vulnerable to fire. In order that a systematic and comprehensive approach be taken, a fire protection master plan will be completed with $100,000 received in FY 1986. An amount of $100,000 is requested in FY 1987 to begin implementation of the plan, to include replacement of the fire alarm control panel, installation of smoke detectors on the third floor administrative areas and in the galleries, and installation of a fire bell system. A further amount of $700,000 is expected to be required in future years to implement other improvements identified in the master plan.

At the Smithsonian Institution Building, funds appropriated from FY 1983 through FY 1985 have been used to design and install smoke detection systems and are being used to install sprinkler systems in the basement and fire-rated partitions throughout the Building. A fire protection master plan was developed in 1985, and funds appropriated in FY 1986 will be used to make further improvements to fire detection and suppression capabilities, including upgrading hardware on emergency door exits and installing sprinkler systems in the center section's attic. The amount of $225,000 requested in FY 1987 will be used to continue improvements, including installation of fire-rated self-closing doors and sprinklers on the first floor and basement levels and in the North and South Towers; and installation of smoke detection in mechanical rooms, basement and fourth floor corridors and in the South Tower. An additional amount of $725,000 is expected to be required in future years to complete work in this Building.

With funds of $225,000 appropriated through FY 1985, fire protection improvements were made at the Arts and Industries Building, including installation of smoke detection systems in the exhibit halls and pavilions, and Halon systems are being installed in the Computer Center. The amount of $100,000 received in FY 1986 will be used to update the fire protection master plan to include space use changes which will be recommended by a space utilization study now under way. A sum of $200,000 is requested in FY 1987 to extend fire protection systems to the remaining unprotected areas of the Building and to correct other life safety deficiencies, such as improving the fire rating of walls, replacing doors with fire-rated doors, providing fire-rated enclosures for electrical and mechanical equipment rooms, and upgrading the fire alarm bells and fire pull stations. This work will be done in conjunction with other space modifications anticipated in the Building. It is expected that an amount of $2.0 million will be required in future years to continue fire protection improvements in the Building.

An amount of $260,000 is requested in FY 1987 for three additional fire protection projects. For the Renwick Gallery Building, $50,000 is requested to install sprinklers on the first floor of the Building as recommended in a fire protection and security improvements study conducted in 1985; the sum of $110,000 is requested to extend the sprinkler system at the Hirshhorn Building to two large basement mechanical rooms; and $100,000 is requested to provide sprinkler systems in all buildings on Barro Colorado Island at the Tropical Research Institute in Panama.

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ACCESS FOR THE DISABLED, SAFETY AND SECURITY, AND CORRECTION OF HAZARDOUS CONDITIONS ($630,000): The Institution continues to place emphasis on correcting facility conditions to improve the security of the National Collections, promote improved environmental conditions for the health and safety of visitors and staff, and provide better access for disabled persons to Smithsonian buildings.

For FY 1987, a total of $630,000 is sought for four projects. To correct hazardous conditions, an amount of $400,000 is required to continue asbestos removal in various Smithsonian buildings. In order to address safety problems, $100,000 is needed for installation of safety guard rails at the Natural History Building; $100,000 is required to replace the floor grates at the entrances of the Air and Space Building; and $30,000 is needed to replace emergency doors, also at the Air and Space Building.

Major attention will continue to be placed on the containment or removal of asbestos materials located in various Smithsonian facilities. Asbestos has been identified in areas of the American Art and Portrait Gallery Building, the American History Building, the Natural History Building, and in a number of buildings at the Suitland storage facility. Additional areas contain asbestos, primarily pipe and duct insulation in most other buildings in Washington, and construction materials at several locations at STRI. Funds of $1.55 million appropriated through FY 1985 were applied toward the containment and removal of asbestos in the attics, mechanical equipment rooms, skylight areas and exhibit halls of the American Art and Portrait Gallery Building, in the carpentry shop in the Natural History Building, and in the television studio and other basement areas in the American History Building. Funds of $500,000 received in FY 1986 will be used to continue removal of sprayed asbestos insulation and encapsulation of contaminated ducts in mechanical equipment rooms in the American History Building and in Building 19 at the Suitland facility. For FY 1987, $400,000 is requested to continue removal and encapsulation of asbestos insulation at several locations, including Buildings 4, 5, 7, 17, 25 and 26 at the Suitland facility and removal of boiler and pipe insulation in the basement of the Cooper-Hewitt Museum. Additional funds will be required in future years to continue the asbestos correction program.

The north and south entrances to the Natural History Building were modified in FY 1980 to improve access for the disabled and emergency exit capabilities. With funds of $200,000 appropriated in FY 1985, Mall entrance gate repairs were completed and the entrance to the Learning Center will be modified. Funds of $200,000 appropriated in FY 1986 will be used to design and install stair and ramp railings at the north and south entrances and design safety guard rails at the south portico and monumental stair. In FY 1987, $100,000 is requested to begin fabrication and installation of the safety guard rails at the south portico. It is expected that an amount of $200,000 will be required to complete installation of the south portico guard rails.

The amount of $130,000 is requested for two safety projects at the Air and Space Building. The sum of $100,000 is needed to replace the floor grates at the north and south entrances to the Building. The Pedigrid system installed during construction of the Building is primarily for removal of excess dirt from the shoes of people entering the museum. Despite continual maintenance, however, the structural support for the system has deteriorated beyond repair and the grates now present a safety hazard, with persons in high-heeled shoes particularly vulnerable. The system will be replaced by a new system of grates which will require less maintenance while providing safe access to the Building. In addition, the sum of $30,000 is needed to replace exterior emergency doors throughout the Building, because they have buckled from the natural movement of the stone facade to which they are attached. Many of the doors have now jammed to the point where they will not open, posing a serious safety problem in the case of fire or other emergency. The metal doors and frames leading from the public galleries will be replaced with new metal doors to be attached to the structure of the Building to avoid recurrence of this problem. It is expected that an additional amount of $30,000 will be required to complete this project.

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UTILITY SYSTEMS REPAIRS AND IMPROVEMENTS ($1,880,000): Funds appropriated in this category are used to maintain, repair and upgrade the heating, ventilating and air conditioning systems (HVAC) and plumbing and electrical systems in the Institution's facilities. Proper maintenance and improvements of these systems are essential for increasing energy efficiency and for providing stable temperature and humidity conditions necessary for the preservation of the collections. Scheduled repairs and replacements of deteriorated equipment components require a consistent level of funding, and major renovations and repairs are required in many Smithsonian buildings where utility systems were not designed with the aid of today's energy saving technologies.

The Institution is making a concerted effort to conserve energy as described in the Uncontrollable Increases Section of this budget request. The most significant energy savings will be realized by applying substantial resources toward upgrading HVAC systems, replacing obsolete equipment and improving the efficiency of environmental zones. HVAC systems have been modified over the years as the Institution's programs have grown, as the functions of the buildings have changed, and as the environmental needs of the collections have become better understood. Prior to 1972, energy conservation did not represent a primary consideration. An integrated approach now is required in order to plan for long-range, systematic HVAC improvements that will meet museum environmental requirements in an energy efficient manner.

Comprehensive HVAC studies and energy audits have been conducted for most of the buildings in order to assist in the planning of future improvements. The scope of the HVAC studies included field investigations of age, condition and performance of existing equipment, controls and current operating conditions; reviews of existing drawings, specifications, operating manuals and hygrothermograph records; an analysis of the relationship between the building structures and the HVAC systems; and an assessment of programmatic needs for environmental control. The data gathered by these studies are providing a basis for determining redesign or replacement needs of existing HVAC systems; for development of construction cost estimates or revision of previous cost estimates; and for establishment of priorities for the repair, replacement or modification of such equipment components as air handling units, chillers, condensers, compressors, cooling towers, automatic temperature and humidity controls, pumps, pipes, fans, filters, ductwork and related electrical and plumbing systems. At the same time, energy audits are being performed to investigate all factors relating to energy use, such as power-consuming equipment and building conditions (doors, windows, insulation, floors and partitions). Current energy consumption and costs are being evaluated; energy conservation opportunities are being identified; projected savings are being calculated; and plans are being developed to carry out recommended energy conservation measures.

For FY 1987, a total of $1,880,000 is requested for utility systems repairs and improvements. A large portion of this request, $975,000 is designated for comprehensive projects to upgrade heating, ventilating and air conditioning systems at the American History Building ($800,000) and the Natural History Building ($175,000). To implement recommendations resulting from an energy conservation study, $200,000 is required to replace windows at the Cooper-Hewitt Museum. An amount of $160,000 is sought to continue installation of a network system that will facilitate computer and other communications between the buildings on The Mall. The sum of $475,000 is required to begin the replacement of electrical transformers containing the dangerous chemicals known as PCBs, as now required by the Environmental Protection Agency. A further amount of $70,000 is required for two utility improvement projects: $30,000 is needed to replace the cooling tower at the Renwick Gallery Building, and $40,000 is needed to upgrade the sewer system at the Galeta site of the Tropical Research Institute.

At the American History Building, a comprehensive HVAC study initiated with $100,000 appropriated in FY 1981 was completed in 1982. Difficulty in maintaining the desired environmental conditions is due, in part, to the age and construction of the

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Building and to the deteriorating condition of the heating, ventilating, air conditioning and refrigeration equipment and controls. The study findings indicate that upgrading the mechanical system is necessary to bring the system up to acceptable museum standards of operating efficiency and reliability. Other related projects recommended in the study include caulking and weather stripping windows and doors; shading and sunscreening windows; ceiling and wall improvements; window replacements; and installation of a central control and monitoring system. Funds of $1.285 million appropriated between FY 1981 and FY 1984 were used to replace 12 deteriorated air handling units and a cooling tower. An amount of $1.8 million appropriated in FY 1985 is being used to prepare drawings and specifications and to begin implementation of the first phase of HVAC renovation based on the study findings and an amount of $1.0 million appropriated in FY 1986 will be used to continue renovating the HVAC system and replacing windows. The amount of $800,000 is sought in FY 1987 to continue this work. It is anticipated that an additional $7.8 million will be required to complete the project.

The Natural History Building houses 100 million specimens in reference collections and also has a wide array of public exhibits that attract millions of visitors annually. The physical limitations of the Building, and the age, type and deteriorating conditions of the HVAC systems, refrigeration equipment and controls make it impossible to maintain the environment required for the preservation of the Museum's collections. In April 1983, an environmental control and energy conservation study was completed. The study findings suggest that air cooling units and central return air and exhaust fan systems be replaced with a centralized air system to be located in new penthouses over the east and west wings for energy efficiency, cost effectiveness and system reliability. Other improvements recommended include wall vapor barriers; roof insulation; replacement of single-glazed windows with double-glazed windows; entrance and exit door modifications; air locks on loading docks; centralization of laboratories with new exhaust systems; new air conditioning units for the Rotunda and attics; cabinet shop dust collection systems; West Court utility systems improvements; automatic temperature control system improvements; replacement of chillers; and a central control and monitoring system. The total cost of these recommendations is estimated to be $54.5 million. These recommendations are being evaluated and reconciled to ensure consistency with program objectives, and an amount of $235,000 received in FY 1986 will be used to begin preparation of design and specifications for this work. The sum of $175,000 is requested in FY 1987 to continue this design and evaluation process.

A major requirement identified in an energy conservation study for the Cooper-Hewitt Museum is to replace the Carnegie Mansion's deteriorated windows and frames. The wood sashes and frames will be replaced and the windows glazed with insulating glass incorporating factory-bonded ultraviolet film to protect the collections from harmful light. The Mansion is a landmark site and the new windows will duplicate the existing design. The amount of $300,000 appropriated in FY 1985 is being used to begin this project with replacement of windows on the third and fourth floors, and $100,000 received in FY 1986 will be used to continue replacement of windows on the ground floor and basement. The sum of $200,000 is requested in FY 1987 to begin replacement of the windows on the second floor and it is expected that $550,000 will be required in future years to complete the first and second floors.

The Institution has established a coordinated program to apply office automation advances in all of its facilities and to provide access to data base management systems. The number of users of terminals and office automation equipment is expected to grow at the rate of 100-200 users per year. (Funding for office automation equipment is sought in the Salaries and Expenses portion of this budget request.) Presently, a large number of devices are in use which would benefit from interconnection, thereby increasing efficiency and effectiveness. These include word and data processing terminals, personal computers and telecommunications equipment. A computer-based research system is operating which has over 50 connections, and a computer-based security and fire protection system is being installed in Washington, D. C. area facilities.

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In the next ten years, additional computer systems and electronic services will be needed including sensing systems for energy management; an expanded telephone system; telexes and facsimile devices; cabling for computer automation terminals and printers; and video systems for exhibits and education. The cost and management problems associated with separately installing these electronic services in each building, coupled with the requirement that most services link buildings on The Mall, led to coordinated planning efforts among the various offices responsible for each system. The result of this planning was a decision to install a common communications pathway system or master raceway system in the Mall area. Plans call for installation to begin in FY 1986 of a raceway system within and between eight buildings in the Mall area which will accommodate future electronic requirements. It will be a single, in-ground, multipurpose conduit system capable of housing wires and cables for all electronic services within and between the Smithsonian, Arts and Industries, Freer Gallery, Hirshhorn, Air and Space, Natural History, American History, and American Art and Portrait Gallery Buildings. Funds of $250,000 appropriated in FY 1986 will be used to initiate the first construction phase which consists of interconnecting the Mall buildings using four-inch conduits encased in concrete. The amount of $160,000 requested in FY 1987 is required to complete the interconnection. An additional amount of $6.4 million is expected to be sought in future years to continue extension of the raceway into each building and branching the system through floors, walls and ceilings to work stations, offices or exhibit areas.

A July 1985 regulation issued by the Environmental Protection Agency requires the replacement of all high-voltage electrical transformers which contain cancer-causing chemicals known as PCBs by October 1990. Polychlorinated biphenyls, or PCBs, are particularly dangerous if they volatize and are converted into dioxin and other highly toxic compounds, which could occur in an electrical fire in a high-voltage vault. Both long-term contamination of museum objects as well as extreme harm to humans could result. PCBs have been shown to cause cancer from contact with the liquid form as well. The Institution has 57 of these transformers in various buildings, and is evaluating each transformer to determine the fastest and most cost effective method for eliminating this hazard to visitors, staff and collections. Options that will be considered include replacement of each PCB transformer or draining and flushing of the PCB liquid from existing transformers and substituting a liquid that is not harmful. In FY 1987, $475,000 is requested to begin implementation of this project. It is expected that an additional $3.1 million may be required to complete this work.

The amount of $7[illegible],000 is requested for two utility improvement projects. The sum of $30,000 is required to replace the cooling tower at the Renwick Gallery, which has deteriorated beyond reasonable repair. An amount of $40,000 is needed for construction of a sewer system at the Tropical Research Institute Galeta Point site. This research station, located on grounds controlled by the United States Navy, currently does not have a sewer or septic system. Sanitary waste is dumped directly into the ocean, presenting a health hazard for the scientists working on Galeta reef, as well as causing damage to the ecology they are studying.

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OTHER PROJECTS ($5,688,000): Projects in this category support the maintenance and development of the Institution's outlying facilities and other projects designed to meet programmatic objectives in the areas of research, collections management and exhibitions. For FY 1987, a total of $5.688 million is sought for the following projects:

($000s)

FACILITY	PROJECT DESCRIPTION	AMOUNT
American History Building	Relocation of space/functions	$ 400
American History Building	Mezzanines/exhibit halls	103
Natural History Building	Libraries space modifications	215
Arts and Industries Building	Relocation of space/functions	200
Arts and Industries Building	Space improvements	300
Arts and Industries Building	Computer relocation	300
Freer Gallery Building	Underground expansion	2,500
Hirshhorn Building	Master plan	125
Smithsonian Tropical Research Institute	BCI dining/conference facility	665
Smithsonian Tropical Research Institute	Naos Island dormitory	415
Smithsonian Tropical Research Institute	Gamboa dormitory	220
Whipple Observatory	Ridge dormitory design	45
Miscellaneous	Advanced planning and design	200
TOTAL		$5,688

-- American History Building - ($503,000)

Beginning in FY 1985, a major renovation of the HVAC systems will be under way at the American History Building, along with extensive work on fire protection, asbestos removal and master raceway system projects. As much as possible, construction will be coordinated so that all work required in a specific segment of the Building is done concurrently, to minimize disruption to Museum programs and activities and to achieve cost savings by combining similar requirements into larger contracts. In order to accomplish this work, however, major relocations of staff and collections will be required within the Building. The first phase of a master implementation study by an architectural/engineering firm is expected to be completed by the end of spring 1986. This study will determine the sequence of areas to be addressed within the Building to accomplish multiple projects and will outline implementation of the first segment of work. An amount of $400,000 is requested in FY 1987 to make modifications necessary to accommodate dislocated staff and collections in temporary staging areas. It is anticipated that an additional $400,000 will be required in future years to support this project.

The long-range exhibit reorganization plan for the National Museum of American History calls for construction of a mezzanine system in various galleries on the first through third floors of the Building. The mezzanine will create space for study galleries in key exhibitions, which will permit greater individual interaction by the public with museum artifacts not normally on exhibit because of lack of space. For FY 1987, the amount of $103,000 is requested to begin design, fabrication and construction of the basic steel and concrete gal'eries, necessary stairs and railings which will be incorporated into specific exhibit areas currently being designed by the Museum. The first exhibition to include the gallery concept is planned to celebrate the Bicentennial of the Constitution and will open in 1987 on the east side of the third floor. This

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exhibition is being designed with a permanent core to occupy present space with mezzanine added, with shorter term interpretive and study exhibits in the surrounding areas. The amount of $1.4 million is expected to be required in future years to continue installation of mezzanines in concert with the long-range Exhibit Hall renovation program.

--Natural History Building - Libraries - Space Modifications - ($215,000)

With funds of $200,000 appropriated in FY 1980, the first renovation phase was completed for space modifications of the Smithsonian Institution Libraries located in the Natural History Building. Reader services areas are being renovated with funds of $165,000 appropriated in FY 1984, and $230,000 appropriated in FY 1985 is being used to modify the central library processing areas including central reference, binding, gifts and exchange, and shipping and receiving. Funds of $200,000 received in FY 1986 will be used to complete the renovation of the Natural History library branch, including the purchase and installation of a compact library shelving system, and space modifications for the administrative, cataloguing and program office areas in the northeast section of the library. The amount of $215,000 is sought in FY 1987 to complete the final phase of this project which includes renovation of the library's administrative office and public access areas, including upgrading of HVAC and electrical systems and reorganization of space for more efficient utilization.

-- Arts and Industries Building - ($800,000)

At the Arts and Industries Building, a major renovation of the facade and roof has been under way since 1982. An amount of $200,000 is requested in FY 1987 to construct temporary work areas to accommodate functions and activities presently located in the Building which must be relocated within the building or to other buildings during the final phase of the roof and facade work. Major activities expected to be relocated in FY 1987 include the Smithsonian Magazine offices, administrative staff of the Office of Information Resource Management, the Associates classrooms and Smithsonian training areas.

A comprehensive space study of the Arts and Industries Building is currently being conducted to evaluate existing space use and investigate future needs. In addition to recommending space improvements, the study is focusing on activities located in the Mall area that could be relocated to the Arts and Industries Building. An amount of $300,000 will be used in FY 1986 to begin the design of the renovations for upgrading the HVAC system to provide a more acceptable museum environment and greater energy efficiency, as well as modifications to the administrative and exhibit spaces of the Building. The sum of $300,000 is requested in FY 1987 to continue the design requirements. It is expected that an additional $13.7 million will be required in future years for interior renovations, with a further amount of $10.5 million required for implementation of HVAC improvements.

One key to the effective utilization of the space in the Arts and Industries Building is the relocation of the central computer facility to another building. This will free space in the Building to consolidate central administrative functions now scattered in various locations. The Institution is currently studying alternate locations for the computer facility, which will require about 6,600 square feet for the technical center and office space for technical operations staff. The amount of $300,000 is requested in FY 1987 to begin construction for the relocation of equipment to a modern, safe, secure and environmentally controlled facility. It is expected that an additional $300,000 will be required to complete construction and fund relocation of equipment.

-- Freer Gallery Building - ($2,500,000)

The art treasures of the Freer Gallery, conservatively valued well in excess of $1 billion, are at risk in overcrowded storage facilities built 65 years ago when Charles

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Lang Freer gave his collection to the Nation and the building to house it. While objects have not been acquired at a rapid rate, the acquisition of a small number of master works each year has brought the Gallery to its present total of over 26,000 pieces. Only four percent of the collection is exhibited at any one time. The remaining 96 percent must be stored and preserved in a manner appropriate for the treasures of a nation. Yet, these treasures are currently stored so closely together that any transfer of objects threatens damage to neighboring objects. Textile objects must be folded to fit the space available, which can cause irreparable damage to fibers over a prolonged period. Aware of the growing problem for the past three decades, the Freer has been exploring various solutions for acquiring additional space to improve the storage conditions of its collection.

A number of support activities of the Freer Gallery (administration, curatorial, cabinet shop, library, registration and photographic laboratory) will be relocated to the Sackler Gallery building as soon as that facility has been completed. Relocation of those operations will provide additional space in the Freer Gallery for essential conservation activities, but will give little or no relief to crowded collection storage. The terms of the Freer bequest, which stipulate that the Freer collection not leave the Freer building except during renovation, prohibit long-term off-site storage. Given the location of the Freer building and present construction of the Sackler Gallery to the east, the only remaining possibility to gain additional space at the Freer Gallery is to excavate below the existing structure.

Aware of Congressional concerns about construction cost per square foot of space of the project proposed in FY 1986 (estimated at $5 million), the Institution intensified the search for an alternative plan that would substantially meet the needs of all parties. The new plan reduces the construction cost to $2.5 million while providing almost the same amount of space for the project's highest priority, collection storage. This is achieved by abandoning the effort to develop the space on the southeast side of the Freer at the same deep level (elevation: 9' 6") as the underground connection to the Sackler Gallery. Rather, the primary space for collection storage will be developed at the less costly shallower level (elevation: 16' 10") below the floor of the existing subbasement on the southwest side of the Freer. Similarly, the new plan excavates below the Freer courtyard to the less costly, shallower depth than the deep level of the underground connection. In both plans, increased HVAC capacity and major modifications of the existing HVAC system are required along with underpinning all bearing walls and columns affected, but underpinning at the shallower depth is far less costly.

While the new design provides almost the same amount of square footage of collection storage space (8,870 net square feet on the subbasement level plus 1,184 square feet on the current basement levels for half the cost, it also eliminates exhibition gallery space as well as related space for exhibition staging, for exhibition prop storage), a secure nonpublic passageway for objects and staff, flexibility in the use of spaces in the future, and an architectural elegance of design. The Freer Gallery feels that the loss of these factors is an acceptable compromise to solve the most urgent problem of collection storage. It is also understood that the timing of the project cannot be delayed if the obvious cost efficiencies are to be gained in simply expanding the already-planned excavation of one-third of the Freer's courtyard for construction of the passage connecting the Freer and the Sackler, a project included in the Quadrangle construction budget.

An amount of $2.5 million is requested in FY 1987 to construct additional collection storage space for the Freer Gallery. This will include mechanical, electrical, security and fire protection systems, all interior finishes, and replacement of the elements of the present courtyard to its original appearance.

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— Hirshhorn Museum and Sculpture Garden - ($125,000)

The Museum's collection has almost doubled in size as a result of the Hirshhorn bequest. Although additional space is needed to accommodate these works, a shortage of space already exists for many of the Museum's activities. Functional areas which require additional or modified space include exhibits, storage, laboratories, training, rest rooms, and the auditorium. An amount of $75,000 appropriated for FY 1986 will be used to initiate a space use master plan to assist the Museum in making better use of existing space and in developing new space within the boundaries of the Museum site. The amount of $125,000 is requested in FY 1987 to complete this project and to fund the design of the first phase of the required modifications.

-- Smithsonian Tropical Research Institute - ($1,300,000)

Barro Colorado Island Conference/Dining Facility - ($665,000):

Barro Colorado Island (BCI), located in the Gatun Lake, serves as the principal site for terrestrial research at STRI. Representing the only piece of lowland, moist forest under U.S. custodianship, the Island has attracted thousands of international researchers since its establishment in 1923. The data base which has been amassed over the years makes BCI the most studied piece of tropical real estate in the world. The importance of BCI as a research center is corroborated by the fact that present dormitory and dining facilities are inadequate to meet the demands of the present staff, and long- and short-term visitors, so that worthy applicants must be turned away.

An amount of $665,000 is sought in FY 1987 to construct a two-story, 2,700 square foot conference/dining facility on Barro Colorado Island. The existing 50-year-old wooden frame building is in poor condition, does not meet sanitary standards, and can only accommodate serving 135 meals a day. The new building will have a dining room on the first floor, offering safe and sanitary conditions, and allow for service of 240 meals a day. The second story above the dining room will be a multipurpose room providing space for lectures, symposia and conferences which are significant parts of the intellectual life at Barro Colorado Island.

Dormitories at Naos Island and at Gamboa - ($635,000):

STRI is one of the largest organizations in the world devoted to basic research on the ecology, evolution and behavior of tropical ecosystems. A staff of 26 professionals maintains an active research program including collaborative efforts each year by some 1,300 visiting scientists and students representing more than 200 institutions worldwide. STRI and visiting scientists and students are conducting joint studies that bear directly on natural resource issues in the tropics. To assure that continuation of collaborative research efforts, it is essential that visiting scientists and students have access to suitable housing at or near research and laboratory locations. Consequently, an amount of $635,000 is requested in FY 1987 to construct a dormitory on Naos Island ($415,000) and to renovate existing apartments at Gamboa ($220,000). No local housing is otherwise convenient or economically available at these sites.

Naos Island Dormitory - For FY 1987, an amount of $415,000 is sought to construct a two-story dormitory on Naos Island that would accommodate 10 visiting scientists. STRI's Naos marine laboratory is situated at the end of a long artificial causeway, and is bordered on one side by the Pacific entrance to the Panama Canal and on the other side by the Bay of Panama. Its location, not accessible by public transportation, is several miles away from areas in which STRI housing is available. Because marine scientists have irregular work schedules that are based on shifting tide cycles, they require accommodations that are near their work sites. An on-site dormitory would enhance research productivity. The proposed dormitory would replace several structures, located

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approximately five miles from Naos near STRI's administration building in Panama City. These structures are being returned to the Panamanian Government under the terms of the Treaty. Major modifications to existing water and electricity services would not be necessary, but an independent sewage processing and disposal system would be essential. The cost of such a system is included in the amount sought.

Gamboa Dormitory - An amount of $220,000 is requested for FY 1987 to renovate an apartment building at Gamboa. Development of a dormitory at Gamboa would serve several purposes. Gamboa is located near Barro Colorado Island and provides easy access to several field sites, including a 54,000-acre National Park of great importance for scientific research. Thus, the availability of housing in Gamboa would relieve pressure for quarters on Barro Colorado Island and at the same time establish a base for research on habitats and species that are not available on BCI.

The building which will be renovated was built to accommodate eight bachelor apartment quarters. It consists of a ground floor with enclosed garages and two upper floors with four apartments per floor. At present, it has damage to doors, walls, ceilings and floors. The renovations will result in eight double apartments with basic facilities, including a kitchenette in each apartment and a self-service laundry area.

-- Smithsonian Astrophysical Observatory, Whipple Observatory - ($45,000)

The dormitory built in 1973 on the ridge of Mt. Hopkins provides seven bedrooms and kitchen, dining, library and recreation areas for scientists and technicians engaged in around-the-clock research and maintenance on the telescopes at the Whipple Observatory. The present structure, however, is situated at the top of a natural chimney or cleft of the mountain, making it particularly vulnerable to possible brush fire. In addition, the upstairs sleeping quarters are modified officers' barracks made of highly combustible materials, and egress from this floor is limited to the area most likely to be subject to brush fire. For FY 1987, the sum of $45,000 is requested for design of a new dormitory to replace this building, including a study to determine the most appropriate location for the new dormitory. The new building will be approximately 2,500 square feet and will house six to eight persons. Construction costs of approximately $400,000 will be requested in future years.

-- Advanced Planning and Design Funds - ($200,000)

For FY 1987, an amount of $200,000 is requested for both advanced planning and advanced design of projects in all subaccounts within the Restoration and Renovation of Buildings account and for initial planning required to estimate other construction needs of the Institution. For the majority of the R & R projects, particularly projects which are not phased and require only one year of funding, the project request includes funds for planning, design and construction. The planning and design stages require approximately ten percent of the project's funds, but may take from one to twelve months to complete, depending upon the project's complexity. Construction costs escalate at a rate of one-half percent per month, so that six percent of a project's construction funds could be lost in one year. Advanced planning and design funding will enable the Institution to develop better cost estimates and to contract for construction as soon as the R & R appropriation is received. In addition, advanced planning funds are essential to the assessment and development of future construction needs of the Institution outside the confines of the R & R account. Requirements must be identified and plans and budget estimates solidified in order to be able to include these projects in long range planning. Funds of $200,000 appropriated in both FY 1985 and in FY 1986 are being used for these purposes. Funds will continue to be sought in future years for advanced planning and design work.

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CONSTRUCTION

FY 1985 Appropriation	$ -0-
FY 1986 Appropriation - Quadrangle	$3,976,000
PL 99-177 (Balanced Budget & Emergency Deficit Control Act of 1985)	$3,805,000
FY 1987 Estimate - Quadrangle	$4,000,000
FY 1987 Estimate - Smithsonian Tropical Research Institute	$3,500,000

Quadrangle Construction

Public Law 96-36, signed by the President on July 20, 1979, authorized planning for the development of the Quadrangle to house new facilities for museum and education purposes in the area located immediately south of the Smithsonian Building. This project, including a connecting underground link to the Freer Gallery, is estimated to cost $73,160,000, with funding shared between government and private sponsors. In FY 1982, $960,000 was appropriated to complete planning and design. An amount of $36,500,000 was appropriated in FY 1983 to allow the Institution to construct a building. Because a favorable construction contract was awarded by the General Services Administration, the Congress rescinded $8,000,000 from the construction appropriation in FY 1984. Legislative language accompanying this reduction confirmed a continuing commitment from Congress to support the project, and provided for the Institution to request future amounts necessary to complete this major initiative. To that end, $3,805,000 has been made available to the Institution in FY 1986, and $4,000,000 is being sought in FY 1987.

The Quadrangle building includes exhibition galleries and supporting museum facilities for the National Museum of African Art as well as for the collections of Near and Far Eastern art known as the Sackler Gallery. In addition, areas are assigned to the Smithsonian Institution Traveling Exhibition Service, the Smithsonian Resident and National Associate Programs, other public education facilities, and the International Center for special exhibitions and symposia. The building includes two small above-ground entrance pavilions which serve as introductory galleries and form an enclosure for a landscape design appropriate to the new structures, as well as to the Smithsonian Institution, Arts and Industries and Freer Gallery of Art buildings nearby. The two pavilions will allow access to three building levels below grade in which exhibition galleries, libraries, classrooms, collections storage, and administrative and technical spaces are located.

Occupancy of staff areas is expected by June 1986 on the lowest level and by July on the two upper levels. The Institution requests an appropriation of $4,000,000 in FY 1987, to fund continuing construction management costs, to construct the tunnel link to the Freer Gallery of Art and to cover construction contingencies and claims. An amount of $2,630,000 in Institution Trust funds will be used to round out the total funding required in this final year. The combined amount of $6,630,000 is vital to the effective use of the Quadrangle and Freer Gallery buildings.

A revised budget for FY 1986 and FY 1987 to complete the Quadrangle project is shown below. This budget revision accurately reflects construction progress through December 1985, as well as design and construction refinements instituted over the last 18 months.

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As reflected in the following chart, the revised budget reduces the overall amount ($75 million) authorized for Quadrangle design and construction by approximately $1.8 million.

This reduction and individual budget category refinements are intended as a final adjustment based on 75 percent construction completion, interior design contracts completed in January 1986, completion of security installation design documents, and current construction change order information. Work originally contemplated under "Final Building Preparation" has been taken care of through recent resolutions of design matters concerning exhibition space. Inasmuch as the work in question is being accomplished by "change orders," a prudent increase in construction contingency has been budgeted. The amount of Trust funds available in FY 1987 is a realistic estimate taking into account anticipated revenue from the sale of the Museum of African Art buildings and several pledged donations that are unlikely to be fulfilled.

Quadrangle Construction and Equipping Budget Plan

($000s)	Overall Budget for Project		Estimated Obligations /1			
			Through		In	
Budget Category	Previous	Current	FY 1986		FY 1987	
Design and Construction Mgmt.	$ 8,960	$ 8,630	$ 8,300	(8,960)	$ 330	
Site Preparation	1,500	1,500	1,500	(1,500)	-	
Construction Contract	39,400	39,400	39,400	(39,400)	-	
Freer Link Construction & Mgmt.	5,300	5,300	300	(4,700)	5,000	(600)
Construction Contingency	5,000	6,000	5,000	(3,500)	1,000	(1,500)
Government-Furnished Equipment	3,650	3,650	3,350	(2,950)	300	(700)
Security Installation	2,350	1,350	1,350	(2,350)	-	
Furnishings	6,150	6,680	6,680	(3,150)		(3,000)
Moving	450	650	650	(450)	-	
Final Building Preparation	2,200	-	-	(0)		(2,200)
TOTALS	$74,960	$73,160	$66,530	(66,960)	$6,630	(8,000)

/1 Amounts shown in parentheses are the allocations shown in the FY 1986 Budget to Congress.

FY 1986 Plan of Work

In FY 1986, the Smithsonian expects to complete the installation of security equipment and the purchase of furniture and equipment for public, administrative and shop areas. Furnishings for above-ground public areas include custom-made seating appropriate to thematic and architectural representations of the museums. Below-ground purchases include carpeting and lighting for exhibition areas, and classroom and conference seating and equipment. Flexible storage equipment will be required to provide proper storage of collection and library materials, and to furnish areas in which artifacts may be received and studied. Conservation, photographic, and exhibit production shop equipment will be needed as well. Amounts budgeted are based on completed design documents that will be contracted for by the Smithsonian. It is expected that the amount shown through FY 1986 will be obligated fully this year.

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FY 1987 Funding Requirements

An amount of $1,000,000 is required in FY 1987 for additional construction contingency costs to cover construction changes, as well as claims by the contractor caused by such factors as design corrections and discovery of unknown conditions. This will bring the available construction contingency up to $6,000,000. The Smithsonian estimates that construction changes identified as of January 1986, may cost up to $3,700,000.

An amount of $5,000,000 is required for FY 1987 for construction of the tunnel link between the Quadrangle building and the Freer Gallery of Art. The timing of this construction will avoid extensive disruption to Freer operations and programs until they are first relocated to the completed Quadrangle building. This move is now scheduled for the fall of 1986, when weather conditions are likely to more closely resemble the temperature and humidity inside the buildings and thus reduce the chance of damage to the collections. Furthermore, this construction must be coordinated with planned work on the interior of the Freer. This portion of the Quadrangle project accordingly has been scheduled to begin in late fall of 1986.

The balance of the fundng required includes $330,000, for continued construction management services from the General Services Administration and other inspection and monitoring consultants and staff, and $300,000 for government-furnished equipment.

Smithsonian Tropical Research Institute Research Facility

The Smithsonian Tropical Research Institute (STRI), located in the Republic of Panama, is the principal U. S. center for research in tropical biology. Each year, hundreds of U. S. and international researchers join the permanent STRI staff in undertaking fundamental studies on the tropics. Increasingly, scientists and policymakers have recognized the need to understand how tropical ecosystems function in order to predict more accurately environmental changes in the temperate zones, as well as to guide development programs that affect tropical environments.

The Smithsonian has identified a need to replace and improve obsolete, substandard facilities now in use at the Smithsonian Tropical Research Institute, as well as to provide additional facilities to support the current research program. A comprehensive master plan for all STRI facilities will be completed in FY 1986. In FY 1987, funds are requested for the construction of a terrestrial laboratory and conference center on the Tivoli site. For a number of years, the present research offices and laboratories for terrestrial scientists at STRI have been inadequate. The existing structure of approximately 12,000 square feet is located at Ancon, approximately one-half mile from the main STRI administrative complex at Tivoli. This building was transferred to STRI by the Atlantic-Pacific Inter-Oceanic Study Commission at the conclusion of its deliberations in 1970. The building dates from approximately 1919, and has served as a hospital, laboratory and morgue. Despite renovations, it has inadequate wiring and plumbing. Its layout does not allow for modern laboratory space and its hillside location precludes the development of sufficient outdoor cages or parking to satisfy current scientific requirements. In addition, a severe asbestos problem and the presence of arsenic in the basement pose potential health risks.

The construction of a new laboratory at the central administrative site at Tivoli will allow for more efficient space utilization in support of scientific programs. The research staff would have more ready access to administrative support requirements as well as the central library for research endeavors. Greater efficiency in computer usage would be possible via a master raceway network linking all buildings at a common site. Janitorial, maintenance and security services also would benefit from this consolidation. Since this building will be the principal facility for the largest group of STRI

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scientists, it will include conference and seminar space and a dining facility. Site improvements will be undertaken to tie together the entire Tivoli site into an efficient complex.

This effort to modernize STRI facilities represents the largest single private cash donation received for science facility development at the Smithsonian Institution. The family of Earl S. Tupper has donated $4,000,000 to provide the building shell. The Institution seeks $3,500,000 to complete construction and to furnish and equip this 67,000-square-foot facility. This is an excellent example of the spirit of cooperation between the private and public sector for research and development at the United States' principal research institute in tropical biology. This new facility will redress the deficiencies allowing STRI to apply modern scientific technologies to the critical biological problems of the rapidly diminishing tropical habitats.

($000s)

Project Cost Components	Estimate
Construction	$4,300
Site Improvements	610
Escalation	400
Construction Contingency	450
Design and Construction Management	720
Equipment and Furnishings	970
Moving	50
Total Project Cost	$7,500

An amount of $4,300,000 will be required to construct the new facility, which will provide laboratory space for approximately 12 permanent staff members and 24 visiting scientists, fellows and assistants. In addition to office and laboratory spaces, other indoor areas will include darkrooms, an aquarium room, a specialized environmental control laboratory, an analytical chemistry room, space for instrument repair, a computer room, chemical storage and disposal systems, reference collection storage, and an herbarium. Adjacent to the main laboratory will be an insectary, an aviary and a small animal facility for mammals, reptiles, and amphibians, and plant growing space. The conference center will consist of two rooms, an auditorium with a seating capacity of 180 and a room with movable partitions to host seminars, workshops and other recurring activities important to a scientific community. It will provide the capability of hosting local, regional and international conferences as well. Site improvements will include excavation and drainage, utilities, covered walkways, paved parking, and landscaping at an estimated cost of $610,000. An amount of $970,000 is requested for equipment and furnishings for the laboratory and conference areas and for the kitchen and dining room. Further amounts of $400,000 will be required to cover expected escalation of project costs; $450,000 for construction contingencies such as change orders, possible contractor claims, and obtaining materials locally versus exporting to Panama; and $720,000 for design and construction management costs to complete the project. An additional amount of $50,000 is requested for costs associated with the move from the Ancon facility to the new Tupper complex.

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APPENDIX

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SMITHSONIAN INSTITUTION
Salaries and Expenses

Report of Appropriation by Objects of Expense

(Dollars in thousands)

		1985 Actual	1986 Base	1987 Estimate	Increase 1987 over 1986
11	Personnel Compensation.....	99,794	103,706	107,929	4,223
12	Personnel Benefits.....	11,984	13,110	13,675	565
13	Benefits for Former Personnel..	230	398	398	0
21	Travel & Transportation of Persons.....	1,089	1,195	1,505	310
22	Transportation of Things.....	598	813	1,026	213
23	Rent, Communications and Utilities.....	17,182	18,477	21,349	2,872
24	Printing and Reproduction.....	1,406	1,879	2,264	385
25	Other Services.....	16,400	15,572	17,398	1,826
26	Supplies and Materials.....	7,937	9,153	10,164	1,011
31	Equipment.....	4,902	10,597	12,587	1,990
	Collections Acquisition.....	1,122	1,078	1,097	19
32	Land and Structures.....	119	0	0	0
41	Grants.....	1,356	1,007	659	(348)
42	Insurance Claims and Indemnities.....	9	10	10	0
	TOTAL.....	164,148	176,995	190,061	13,066

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SMITHSONIAN INSTITUTION

Annual Visitation
FY 1981 - FY 1985

MALL	FY 1981	FY 1982	FY 1983	FY 1984	FY 1985
SI Building	956,190	1,017,782	930,426	966,191	1,046,151
Arts & Industries Building	1,188,507	1,098,091	1,043,224	1,046,180	1,048,089
National Museum of Natural History	4,998,736	4,961,180	5,650,406	6,336,796	5,691,681
National Air and Space Museum	7,538,954	8,453,773	9,837,651	15,123,914	9,160,371
Freer Gallery of Art	305,411	285,410	269,980	373,208	291,376
National Museum of American History	5,162,452	4,463,041	5,049,038	5,392,718	4,858,483
Hirshhorn Museum and Sculpture Garden	924,805	1,038,910	1,052,786	980,944	1,059,050
OFF-THE-MALL					
American Art & Portrait Gallery	384,228	356,098	397,232	368,595	373,105
Renwick Gallery	243,900	172,909	149,447	129,989	124,684
National Museum of African Art	102,314	85,874	75,238	50,312	43,661
Anacostia Neighborhood Museum	33,709	46,033	17,210	22,681	21,603
Cooper-Hewitt Museum	146,925	166,778	216,720	131,690	112,442
National Zoological Park /1	3,289,000	3,275,000	3,300,000	3,300,000	3,100,000
GRAND TOTAL	25,275,131	25,420,879	28,009,358	34,223,518	26,930,696

/1 Numbers of visitors are estimates based on a sampling system.

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($1,000's)

SMITHSONIAN INSTITUTION - FINANCIAL SUMMARY
Fiscal Years 1985 - 1987

	FY 85 Actual	FY 86 Projected	FY 87 Estimate
SI OPERATING FUNDS			
FUNDS PROVIDED:			
FEDERAL APPROP. - S&E	164,321	176,995	190,061
FEDERAL GRANTS & CONTRACTS	15,653	15,815	16,381
NON-APPROP. TRUST FUNDS			
Investment Income			
-Unrestr. General & Spec. Purpose	4,782	5,119	4,954
-Restricted	3,639	3,902	3,801
Gifts & Grants (Ex. Gifts to Endow)			
-Unrestr. General & Spec. Purpose	49	278	186
-Restricted	5,493	6,880	12,631
Self-Generated Revenues			
Institutional (Gen. Unrest.)			
-Gross Revenues	135,368	147,352	162,061
-Less Related Expenses	(113,833)	(130,996)	(141,876)
-Net Income	21,535	16,356	20,185
Bureau (Spec. Purpose)			
-Gross Revenues	5,792	3,756	3,675
-Less Related Expenses	(5,528)	(3,164)	(2,946)
-Net Income	264	592	729
Other Misc. - Unrestricted	1,913	1,554	1,467
-Restricted	805	887	919
Total Non-Approp. Tr. Funds - Gross	157,841	169,728	189,694
-Net of Exps. of Self-Gen. Revs.	38,480	35,568	44,872
TOTAL ALL OPER. FUNDS PROVIDED:			
-Gross	337,815	362,538	396,136
-Net	218,454	228,378	251,314
FUNDS APPLIED:			
Science	80,586	80,417	85,392
Less: SAO Overhead Recovery	(2,282)	(2,340)	(2,430)
History & Art	36,208	43,117	44,931
Public Service	4,480	4,210	4,350
Museum Programs	11,159	13,316	13,070
Directorate of International Act.	642	1,455	2,333
Special Programs	14,654	19,168	21,163
Associates Pgms/Business Mgmt.	930	1,076	1,045
Administration			
-Federal Appropriation	11,549	12,411	12,504
-Trust Funds	7,814	9,385	10,691
Less: SI Overhead Recovery	(7,391)	(7,900)	(8,200)
Facilities Services	48,576	54,406	59,872
TOTAL OPERATING FUNDS APPLIED	206,925	228,721	244,721
TRANSFERS (Non-Approp. Trust Funds)			
To Plant Funds	20	22	-
To Endowment Funds			
Unrestricted Purpose	3,014	3,100	3,500
Restricted Purpose	129	417	107
Total Transfers	3,163	3,539	3,607
CHANGE IN FUND BALANCE			
Unrest. & Special Purpose	7,779	(3,084)	(1,279)
Restricted(Incl. Fed. Grants & Contr.)	587	(798)	4,265
Total	8,366	(3,882)	2,986
FUND BALANCES - END OF YEAR			
Unrestricted & Special Purpose	28,970	25,886	24,607
Restricted (Incl. Fed Grants & Contr.)	9,684	8,886	13,151
Total Operating Fund Balances	38,654	34,772	37,758
* * * * * * * * * * * * * * * * * * * *			
OTHER FEDERAL APPROPRIATIONS			
-Foreign Currency Program	8,820	2,485	0
-Construction	18,326	20,503	25,179
TOTAL FEDERAL APPROPRIATIONS	191,467	199,983	215,240

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Financial Report

Ann R. Leven, Treasurer

Fiscal year 1985 was one of transition, selective growth and financial stability for the Institution. Federal appropriations enabled the Institution to fund budgeted programs and to proceed with needed repairs and renovations to Smithsonian facilities. An increase in trust fund revenues supported new initiatives during Robert McCormick Adams' first year as Secretary. The Treasurer's Office itself bustled with activity as fiscal policies came under review, a minor reorganization took place, and new ideas percolated. A dedicated staff made the year one of substantial accomplishment.

Operations

For the fiscal year ending September 30, 1985, the Federal Government provided $164,321,000 to fund on-going operations, an increase of $7.6 million over the previous year. This additional federal funding provided support for inflationary cost increases and important program initiatives. Incorporated in the Congressional action, however, was a two

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percent reduction applied to each line item in the budget. This across the board reduction, combined with the receipt of only partial funding for the costs of legislated pay raises, required the curtailment of purchasing and hiring throughout the Institution, as well as the undesired limitation of summer evening visiting hours.

There has been a great deal of discussion both inside the Institution and by outside parties concerning the percentage of operating support actually provided by federal appropriation versus that provided by the net income available from endowments, museum shop sales and other revenue generating trust activities sources. The question is easily answered by the following chart:

Source of Funds	Gross Revenues (In $1,000s)	Net Income (In $1,000s)	Net Income %
Federal Appropriation	$ 164,321	$ 164,321	75%
Federal Gr. and Contracts	15,653	15,653	7
All Trust Sources	$ 157,841	38,480	18
Total Available for Operations	$ 337,815	$ 218,454	100%

Included with this narrative are charts which graphically spell out how Smithsonian funds available for operations were allocated.

Federal appropriations provide the core support for the Institution's continuing programs in research, exhibitions, education, and collections management, including related administrative and support services.

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Substantial sums go for maintenance and protection of the collections and physical plant. During fiscal 1985 major new funding was provided for the replacement of scientific equipment; for Quadrangle-related activities of the National Museum of African Art, the Sackler Gallery, and the Libraries; for research activities of the National Museum of Natural History; for exhibition activities at the National Museum of American History, including a program to commemorate the Bicentennial of the Constitution; and for enhanced guardianship and maintenance.

Support from federal agencies in the form of grants and contracts constitutes an important source of research monies for the Institution while also benefitting the granting agencies by providing access to Smithsonian expertise and resources. Sponsored research conducted during fiscal 1985 included continuing work on the algal turfs and the Caribbean king crab mariculture, systematics of Aedes mosquitoes, development of an optical interferometer which will substantially improve the ability to measure the angular position of stars, and development of a community-based science education program.

Income from nonappropriated trust fund sources including gifts, grants, endowment, current investments and revenue producing activities allowed the Institution to undertake new ventures and enhance existing programs in a way that might not otherwise have been possible. Notable in this regard was the establishment of a Special Exhibitions program to help support major temporary exhibitions. The highly successful Aditi Exhibition held in the Evans Gallery of the National Museum of Natural History was one of the first of these specially-funded exhibitions.

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Funding for the Directorate of International Activities, which will coordinate programs for the Smithsonian's New International Center, and for the Council of Overseas Research Centers reflected a new Smithsonian emphasis on international exchange and cooperation.

Two awards programs were significantly augmented by trust funds: Fellowships and Scholarly Studies. The Fellowship program provides stipends to visiting scholars, enabling them to use the collections and resources of the Smithsonian. The Institution's Scholarly Studies program makes grant awards covering research assistance, travel and special supplies to Smithsonian scientists and scholars for individual research projects. Research needs were also served when the Institution allocated monies to convert the 24"-diameter telescope at the Whipple Observatory at Mt. Hopkins, Arizona into a 48"-diameter telescope.

Smithsonian collections benefited from trust fund availability during fiscal 1985. Anticipating the opening of the Quadrangle, the National Museum of African Art acquired a notable collection of 61 objects, ranging in date from the 12th to the 15th centuries A.D. to the mid-twentieth century. In addition, monies were set aside for the Hirshhorn Museum to purchase contemporary art.

Substantial funds were also made available for computer enhancement, as the Institution continues its efforts to improve administrative efficiency and collections accessibility. It is also instructive to note that trust funds enabled the Smithsonian to assist the Visions Foundation to publish its new magazine of Afro-American culture. The first issue of American Visions is scheduled to appear in conjunction with the first

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Martin Luther King Jr. national holiday.

Special Foreign Currency Program

Foreign currencies, accumulated primarily from sales of surplus agricultural commodities under Public Law 83-480 and determined by the Treasury Department to be in excess of the current needs of the United States, are made available to the Institution through the Special Foreign Currency appropriation. In fiscal year 1985, the Smithsonian obligated $9,258,000, equivalent in excess currencies, for scientific work primarily in India but also in Pakistan, Burma and Guinea. The monies were made available to United States institutions for research and advanced professional training in fields of traditional Smithsonian interests and competence. The reserve for the American Institute of Indian Studies was increased by $3.9 million, and the third of four planned contributions was made to the international effort to restore and preserve the ancient city of Moenjodaro in Pakistan.

Construction and Plant Funds

Construction of the Quadrangle proceeded on schedule during 1985.

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During the course of the year, a very large pledge was deemed uncollectable and has been taken as a write-off in the attached statements. This situation is regrettable but will not jeopardize completion of the project. All other major pledges have been collected or are on a progress payment schedule.

On a more positive financial note, the Smithsonian Tropical Research Institute received a commitment and first payment on a pledge of $4,000,000 towards the construction of the Earl S. Tupper Research and Conference Center. Named after the father of the donor, the long needed building will provide conference space and updated research facilities for the Institute.

Perhaps the biggest surprise of the year came when the Institution put up for auction the gaily decorated yellow 1966 Rolls Royce once used by the Beatles. A donation to the Cooper-Hewitt Museum for fundraising purposes from John and Yoko Lennon, the car remained on the Institution's books as an unaccessioned item since 1978. When the flurry of bidding was over, the car brought the unprecedented sum of $2,086,450. Purchased by Mr. Jim Pattison, the car will be an integral part of the 1986 World's Fair to be held in Vancouver, British Columbia. The funds garnered by its sale have been deposited to benefit the Cooper-Hewitt Museum.

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Endowment

The Smithsonian's Endowment Fund reached an all-time high of $148,588,051 on September 30, 1985. It is important to recognize that the Endowment's recent growth can be attributed in large part to successful investment management and yearly additions drawn from revenues generated by the Institution's auxiliary activities.

The success of the Endowment is a living tribute to the memory of Regent William A. M. Burden, who served as Chairman of the Institution's Investment Policy Committee for fourteen years until his death on October 10, 1984. Regent Carlisle H. Humelsine assumed the role of Acting Chairman of the Investment Policy Committee at its fall 1984 meeting.

The Committee met three times during the fiscal year to review the management of the endowment funds. During the past year, the Institution has been equity oriented; this posture served it well as the stock market enjoyed an ebullient period during the summer of 1985. The Institution utilized the Total Return Income policy; total investment return is defined as yield (interest and dividends) plus appreciation, including both realized and unrealized gains. A portion of this return is made available for expenditure each year, and the remainder is reinvested as principal.

The Institution has four investment advisors: Fiduciary Trust

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Company, Batterymarch Financial Management, Torray Clark and Company, and Rollert and Sullivan Company, the successor to Cranahan-Everitt. Advisors are given full discretion as to asset allocation and stock selection. At the suggestion of Batterymarch, in the fall of 1984, the Institution invested in the Trustees Commingled Fund-International Equity Portfolio. The handsome return provided by this investment along with the substantial appreciation enjoyed by the domestic stock market contributed to the endowment fund's stellar performance in 1985.

The Investment Policy Committee served as counsel to the Regents on the difficult questions surrounding investments in companies doing business in South Africa. On June 17, 1985, the Executive Committee of the Board of Regents instructed the Smithsonian's investment managers to dispose of the Institution's holdings in U.S. corporations which had not signed the Sullivan Principles, a code of conduct for American companies operating in South Africa. At the same time, the Executive Committee directed the managers to make new investments only in those corporations that were subscribers to the Sullivan Principles or had no business interests in South Africa. Parenthetically, the Smithsonian does not have and never has had any direct investments in South Africa.

At their meeting on September 16, 1985, the last of the fiscal year, the full Board of Regents reaffirmed the actions of the Executive Committee. Mindful both of their fiduciary obligations and of the Institution's position in American society, the Regents continue to monitor events in South Africa and developments in U.S. policy with respect to that nation. The Smithsonian has joined with the South Africa

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Research Consortium, a loose federation of 37 colleges and universities, to supplement currently available information on the impact of investments on the South African economy.

Financial Management Activities

The arrival of a new Treasurer set in motion a general reassessment of the Institution's financial management practices and procedures. Falling under the aegis of the Treasurer are a diverse group of activities: Office of Accounting and Financial Services, Investment Management, Museum Shops, Mail Order Division, Parking, Concessions, Product Licensing and Risk Management. With the exception of the Office of Accounting and Financial Services, the orientation is primarily on generating and securing private funds. The Treasurer maintains a close working relationship with the Budget Office, under the Assistant Secretary for Administration, and the Office of Membership and Development.

A significant part of 1985 was spent by the Treasurer with assistance from staff and the Institution's internal and external auditors in assessing the capabilities of these offices and establishing goals. Highest priority has been given to maintaining the integrity of on-going operations while planning for extensive future automation that would simplify record keeping, accelerate cash disbursements and enhance overall fiscal efficiency.

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The need for more senior management, particularly in the areas of investment management and long term financial systems planning, became apparent as the assessment progressed. Thus, in April 1985, John R. Clarke was promoted to Assistant Treasurer for Financial Management and Planning. Mr. Clarke has served the Institution in various capacities during his thirteen year tenure, most recently as Executive Assistant to the Treasurer and previously as Acting Budget Officer. His mandate is to oversee the Institution's working capital investment pool and endowment accounting and to work with internal resources in the development of new automated fiscal systems appropriate to the Institution's needs.

Related Organizations

The Woodrow Wilson International Center for Scholars, the National Gallery of Art, and the John F. Kennedy Center for the Performing Arts were established by Congress within the Institution. Each organization is administered by its own board of trustees and reports independently on its financial status. Fiscal, administrative, and other support services are provided the Woodrow Wilson International Center for Scholars on a reimbursement basis by the Smithsonian; office space is made available for Center operations. Administrative services are also offered by the Institution on a contract basis to Reading is Fundamental, Inc. and the Visions Foundation. An independent nonprofit corporation, the Friends of

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the National Zoo (FONZ) operates under contract a number of beneficial concessions for the National Zoological Park.

Accounting and Auditing

The Institution's funds, federal and nonappropriated, are audited annually by the independent public accounting firm of Coopers & Lybrand. Their report for fiscal year 1985 is reprinted on the following pages. Coopers & Lybrand's consulting staff also provided assistance to the Institution during the year at the request of the Treasurer. Special studies were done with respect to payroll/personnel systems and the handling of cash receipts.

The Smithsonian's own internal audit staff regularly reviews the Smithsonian's activities and fiscal systems during the year. Additionally, the Defense Contract Audit Agency conducts an annual audit of grants and contracts received from federal agencies and monitors allocated administrative costs.

The Audit and Review Committee of the Board of Regents, chaired by Regent David Acheson, met three times during the fiscal year pursuant to their responsibilities under the bylaws of the Institution. In addition to reviewing the 1984 audit performed by Coopers & Lybrand, special attention was given by the Committee to the Institution's Business Management activities and the management of the National Zoo.

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TABLE 1.Financial Summary
(In $1,000s)

	FY 1983	FY 1984	FY 1985
INSTITUTIONAL OPERATING FUNDS			
FUNDS PROVIDED:			
Federal Appropriations-Salaries & Expenses	$147,256	$156,683	$169,321
Federal Agency Grants & Contracts	13,125	14,878	15,653
Nonappropriated Trust Funds:			
For Restricted Purposes	9,162	10,181	9,937
For Unrestricted & Special Purposes:			
Auxiliary & Bureau Activities Revenues-Gross	104,129	117,550	141,160
Less Related Expenses	(89,397)	(97,908)	(119,361)
Auxiliary & Bureau Activities Net Revenue	14,732	19,642	21,799
Investment, Gift & Other Income	4,302	5,057	6,744
Total Net Unrestricted & Special Purpose Revenue	19,034	24,709	28,543
Total Nonappropriated Trust Funds-Gross	117,593	132,769	157,841
-Net	28,196	34,891	38,480
Total Operating Funds Provided-Gross	277,974	304,350	337,815
-Net	$188,577	$204,847	$218,454
FUNDS APPLIED:			
Science	$ 68,895	$ 74,134	$ 80,586
Less SAO Overhead Recovery	(2,264)	(2,226)	(2,282)
History & Art	30,979	33,011	36,208
Public Service	2,842	3,526	4,480
Museum Programs	9,702	10,576	11,159
Directorate of International Activities	-	-	642
Special Programs	13,342	14,865	14,654
Associates & Business Management	1,057	884	930
Administration-Federal *	11,032	12,201	11,589
-Nonappropriated Trust Funds	7,226	8,211	7,814
Less Smithsonian Overhead Recovery	(6,331)	(6,528)	(7,391)
Facilities Services	47,649	46,821	49,575
Total Operating Funds Applied	180,130	195,815	206,925
Transfers (Nonappropriated Trust Funds)			
Unrestricted Funds-To Plant	2,069	3,424	20
-To Endowment	3,088	3,313	3,014
Restricted Funds -To Endowment	637	222	129
Total Operating Funds Applied & Transferred Out	$185,924	$202,774	$210,088
CHANGES IN NONAPPROPRIATED TRUST FUND BALANCES:			
Restricted Purpose (Incl. Fed. Agency Gr. & Contracts)	$ 1,765	$ 1,426	$ 587
Unrestricted-General Purpose	28	10	52
-Special Purpose	860	2,282	7,727
Total	$ 2,647	$ 3,678	$ 8,366
YEAR-END BALANCES- NONAPPROPRIATED TRUST FUNDS:			
Restricted Purpose	$ 7,671	$ 9,097	$ 9,684
Unrestricted-General Purpose	5,076	5,086	5,138
-Special Purpose	13,863	16,105	23,832
Total	$ 26,610	$ 30,288	$ 38,654
OTHER FEDERAL APPROPRIATIONS			
Special Foreign Currency Program	$ 2,000	$ 7,000	$ 8,820
Construction	84,500	8,500	18,326
Total Federal Appropriations (Incl. SAO above)	$195,756	$168,223	$191,847

*Includes unobligated funds returned to Treasury: FY 1983 - $62,000; FY 1984 - $102,000; FY 1985 - $173,000.

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TABLE 2.Source and Application of Operating Funds
Year Ended September 30, 1985

(Excludes Special Foreign Currency Funds, Plant Funds and Endowments)
(In $1,000s)

Funds	Federal Funds	Non-federal Funds					
		Total non-federal Funds	Unrestricted			Restricted	
			General	Auxiliary Activities	Special Purpose	General	Grants and Contracts
FUND BALANCES-10/1/84	$ -	$ 30,288	$ 5,086	$ -	$16,105	$ 8,810	$ 287
FUNDS PROVIDED							
Federal Appropriations	164,321	-	-	-	-	-	-
Investment Income	-	8,421	4,137	-	645	3,639	-
Grants and Contracts	-	15,652	-	-	-	-	15,652
Gifts	-	8,692	37	3,150	12	5,493	-
Sales and Revenue	-	138,010	-	132,218	5,792	-	-
Other	-	2,719	233	-	1,680	805	1
Total Provided	164,321	173,494	4,407	135,368	8,129	9,937	15,653
Total Available	$164,321	$203,782	$ 9,493	$135,368	$24,234	$18,747	$15,940
FUNDS APPLIED							
Science:							
Assistant Secretary	$ 516	$ 1,555	$ 96	$ -	$ 62	$ 228	$ 1,169
Natl. Mus. of Nat. History/ Museum of Man	20,194	4,610	65	-	1,791	1,691	1,063
Astrophysical Observatory	8,446	16,894	2,310	-	1,718	268	12,598
Less Overhead Recovery	-	(2,282)	(2,282)	-	-	-	-
Tropical Research Institute	3,554	971	148	-	481	338	4
Environmental Resch. Center	3,324	613	82	-	130	24	377
Natl. Air & Space Museum	8,112	3,488	8	-	3,127	252	101
Natl. Zoological Park	11,104	562	110	-	216	136	80
Total Science	55,250	26,411	537	-	7,525	2,957	15,392
History and Art:							
Assistant Secretary	401	5	5	-	-	-	-
Natl. Mus. of Am. History	11,081	1,461	355	-	797	268	41
Natl. Mus. of American Art	4,625	931	63	-	551	315	2
Natl. Portrait Gallery	3,407	326	13	-	121	192	-
Hirshhorn Museum	2,923	491	14	-	258	219	-
Center for Asian Art	1,549	2,247	56	-	59	2,132	-
Archives of American Art	732	998	2	-	1	995	-
Cooper-Hewitt Museum	880	2,156	720	-	944	421	71
Natl. Mus. of African Art	1,188	763	600	-	105	58	-
Anacostia Museum	817	39	38	-	-	1	-
Total History and Art	27,603	9,417	1,866	-	2,836	4,601	114

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TABLE 2.Source and Application of Operating Funds
Year Ended September 30, 1985

(Excludes Special Foreign Currency Funds, Plant Funds and Endowments)
(In $1,000s)

Funds	Federal Funds	Nonfederal Funds: Total nonfederal Funds	Unrestricted: General	Unrestricted: Auxiliary Activities	Unrestricted: Special Purpose	Restricted: General	Restricted: Grants and Contracts
Public Service:							
Assistant Secretary	217	469	102	-	289	78	-
Reception Center	181	663	662	-	1	-	-
Telecommunications	213	686	522	-	163	1	-
Smithsonian Press	1,124	13,753	-	13,646	49	58	-
Office of Public Affairs	559	336	325	-	10	1	-
Total Public Service	2,294	15,907	1,611	13,646	512	138	-
Museum Programs:							
Assistant Secretary	593	473	14	-	81	376	2
Registrar	32	-	-	-	-	-	-
Conserv. Analytical Laboratory	1,097	29	-	-	29	-	-
Libraries	4,252	360	312	-	12	36	-
Exhibits	1,170	87	-	-	87	-	-
Traveling Exhib. Service	332	2,638	-	1,561	413	651	13
Archives	511	147	146	-	1	-	-
National Museum Act	753	-	-	-	-	-	-
Total Museum Programs	9,040	1,734	472	1,561	623	1,063	15
Directorate of Int'l Activities:	272	370	370	-	-	-	-
Special Programs:							
Am. Studies & Folklife Pgm.	698	1,380	514	-	503	320	43
Int. Environ. Science Pgm.	680	-	-	-	-	-	-
Academic & Educational Pgm.	705	2,004	370	-	1,552	82	-
Collections Mgt./Inventory	1,019	-	-	-	-	-	-
Museum Support Center	7,484	83	-	-	83	-	-
JFK Center Grant	686	-	-	-	-	-	-
Total Special Programs	11,272	3,467	884	-	2,138	402	43
Associate Programs	-	69,155	857	68,214	56	24	4
Business Management	-	30,334	-	30,334	-	-	-
Administration	11,376	8,986	7,072	78	1,722	114	-
Less Overhead Recovery	-	7,391	7,391	-	-	-	-
Facilities Services	47,041	1,575	1,422	-	146	7	-
Transfers Out/(In):							
Treasury	173*	-	-	-	-	-	-
Coll.Acq., Schol.St., Outreach	-	-	2,700	-	(2,700)	-	-
Net Auxiliary Activities	-	-	(20,720)	20,720	-	-	-
Other Designated Purposes	-	-	11,655	815	(12,470)	-	-
Plant	-	20	20	-	-	-	-
Endowment	-	3,143	3,000	-	14	129	-
Total Transfers	173	3,163	(3,145)	21,535	(15,156)	129	-
Total Funds Applied	$164,321	$165,128	$ 4,355	$135,369	$ 402	$9,435	$15,568
FUND BALANCES 9/30/85	$ -	$ 38,654	$ 5,138	$ -	$23,832	$9,312	$ 372

*Unobligated funds returned to Treasury

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TABLE 3.Grants and Contracts-Expenditures
(In $1,000s)

Federal Agencies	FY 1983	FY 1984	FY 1985
Agency for International Development	$ -	$ 428	$ 828
Department of Commerce	(7)	57	87
Department of Defense	1,299	1,056	1,245
Department of Energy	358	227	260
Department of Health and Human Services	280	273	438
Department of Interior	238	204	196
National Aeronautics and Space Administration*	9,551	11,275	11,425
National Science Foundation**	928	820	895
Other	415	501	193
Total	$13,062	$14,841	$15,569

*Includes $197,000 (FY 1983), $399,000 (FY 1984), and $495,000 (FY 1985) in subcontracts from other organizations receiving prime contract funding from NASA.

**Includes $196,000 (FY 1983), $250,000 (FY 1984), and $321,000 (FY 1985) in NSF subcontracts from the Chesapeake Research Consortium.

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TABLE 4.Restricted Operating Trust Funds*
Fiscal Years 1983-1985
(In $1,000s)

Item	Invest-ment	Gifts	Miscel-laneous	Total rev-enue	Deduc-tions	Trans-fers in (out)	Net In-crease (de-crease)	Fund bal-ance end of Year
FY 1983 - Total	$2,971	$5,319	$ 772	$ 9,162	$6,823	$ (637)	$ 1,702	$7,921
FY 1984 - Total	$3,236	$5,859	$1,087	$10,182	$8,571	$ (222)	$ 1,389	$8,810
FY 1985:								
National Museum of Natural History	$1,279	$ 592	$ 18	$1,889	$1,691	$ (11)	$ 187	$1,530
Astrophysical Observatory	84	159	-	243	268	3	(22)	(38)
Tropical Research Institute	55	546	-	601	338	10	273	508
National Air and Space Museum	89	259	2	350	252	-	98	177
National Zoological Park	25	100	-	125	156	-	(31)	118
Other Science	135	131	-	266	252	(128)	(114)	578
National Museum of American History	80	491	3	574	268	-	306	833
National Museum of American Art	93	400	5	498	315	-	183	663
National Portrait Gallery	19	139	-	158	192	-	(34)	145
Hirshhorn Museum	70	1	-	71	219	-	(148)	588
Center for Asian Art	1,256	26	539	1,821	2,132	-	(311)	1,241
Archives of American Art .	34	578	206	818	995	-	(177)	353
Cooper-Hewitt Museum	94	642	28	764	421	-	343	1,036
Traveling Exhibition Service	87	522	-	609	651	-	(42)	888
All Other	239	907	4	1,150	1,156	(3)	(9)	692
Total FY 1985	$3,639	$5,393	$ 805	$9,937	$9,306	$ (129)	$ 502	$9,312

*Does not include Federal Agency Grants and Contracts

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TABLE 5. Unrestricted Trust Funds-General and Auxiliary Activities
Fiscal Years 1983-1985
(In $1,000s)

Item	FY 1983	FY 1984	FY 1985
FUNDS PROVIDED			
General Income:			
Investments	$ 2,489	$ 3,108	$ 4,137
Gifts	24	35	37
Miscellaneous	46	(6)	233
Total General Income	2,559	3,137	4,407
Auxiliary Activities Income (Net):			
Associates	9,864	13,075	13,518
Business Management:			
-Museum Shops and Mail Order	2,710	3,711	5,292
-Concessions, Parking and Food Services	1,670	1,691	1,077
-Other	(300)	(206)	(228)
Smithsonian Press	232	1,158	2,176
Traveling Exhibitions	(363)	(421)	(311)
Photo Services	19	5	11
Total Auxiliary Activities	13,832	19,013	21,535
Total Funds Provided (Net)	16,391	22,150	25,942
EXPENDITURES AND TRANSFERS			
Administrative and Program Expense	14,727	16,769	17,373
Less Administrative Recovery	8,595	8,754	9,673
Net Expense	6,132	8,015	7,700
Less Transfers:			
To Special Purpose for Program Purposes	5,205	7,429	15,170
To Plant Funds	2,005	3,400	20
To Endowment Funds	3,021	3,296	3,000
NET ADDITION TO FUND BALANCE	28	10	52
ENDING FUND BALANCE	$ 5,076	$ 5,086	$ 5,138

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TABLE 6. Auxiliary Activities Fiscal Years 1983-1985
(In $1,000s)

Activity	Sales and other revenue	Gifts	Less cost of sales	Gross revenue	Expenses	Net revenue** (loss)
FY 1983	$ 98,826	$ 2,171	$57,527	$43,470	$29,638	$13,832
FY 1984	$112,179	$ 2,698	$65,309	$49,568	$30,555	$19,013
FY 1985:						
Associates	$ 78,582	$ 3,150	$52,736	$28,996	$15,478	$13,518
Business Management:						
-Museum Shops*	33,668	-	18,272	15,396	10,104	5,292
-Concessions/Parking	2,652	-	-	2,652	1,575	1,077
-Other	155	-	-	155	383	(228)
Smithsonian Press	15,821	-	4,908	10,913	8,737	2,176
Traveling Exhibitions	1,250	-	667	583	894	(311)
Photo Services (Administration)	90	-	10	80	69	11
Total FY 1985	$132,218	$ 3,150	$76,593	$58,775	$37,240	$21,535

*Includes Museum Shops and Mail Order.
**Before revenue-sharing transfers to participating Smithsonian bureaus of $486,000 (FY 1983); $638,000 (FY 1984); and $815,000 (FY 1985).

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TABLE 7. Unrestricted Special Purpose Funds
Fiscal Years 1983-1985
(In $1,000s)

Item	Revenue: Investment	Revenue: Bureau activities	Revenue: Gifts and other revenue	Revenue: Total revenue	Transfers in (out)	Deductions: Program purposes	Deductions: Bureau activity purposes	Net increase (decrease)	Fund balance end of year
FY 1983	$686	$1,132	$1,057	$4,875	$ 5,078	$ 6,961	$2,732	$ 860	$13,863
FY 1984	$672	$2,673	$1,241	$4,587	$ 7,308	$ 7,797	$2,814	$1,242	$14,105
FY 1985:									
National Museum of Natural History	$ 75	$ 2	$ 47	124	$ 2,089	$ 1,791	$ -	$ 422	$ 1,276
Astrophysical Observatory	7	546	27	580	943	547	565	431	1,090
Astrophysical Observatory Computer Center	-	606	-	606	-	-	606	-	-
Tropical Research Institute	16	193	-	209	221	279	202	(51)	102
National Air and Space Museum	111	2,204	240	2,555	(113)	1,193	1,934	(687)	1,308
Environmental Research Center	9	34	5	48	98	95	35	16	191
National Zoological Park	251	-	480	731	246	216	-	761	3,071
National Museum of American History	22	41	102	165	1,180	686	107	552	1,034
National Museum of American Art	18	9	99	126	586	546	5	161	334
National Portrait Gallery	4	12	22	38	70	111	10	(13)	122
Hirshhorn Museum	19	-	66	85	3,205	258	-	3,032	3,496
Cooper-Hewitt Museum	21	786	190	1,005	480	255	689	549	731
National Museum of African Art	1	3	19	23	572	104	1	490	538
Office of Telecommunications	-	53	-	53	-	88	75	(110)	164
Liability Reserves	-	-	-	-	133	36	-	97	3,370
Unallocated Coll. Acq., Schol. Studies, Outreach and Spec. Exhib.	-	-	-	-	1,115	-	-	1,115	1,685
Fellowships	27	-	-	27	1,627	1,468	-	186	1,220
Museum Support Center Equipment	-	-	-	-	-	83	-	(83)	318
Traveling Exhibition Service	3	-	56	59	490	413	-	136	446
Smithsonian Central Computer Center	-	1,041	54	1,095	-	-	1,095	-	-
All Other	61	243	297	600	2,208	1,861	231	743	3,316
Total FY 1985	$645	$5,792	$1,692	$8,129	$15,156	$10,650	$5,528	$7,727	$33,833

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TABLE 8.Special Foreign Currency Program
Fiscal Year 1985 - Obligations
(In $1,000s)

Country	Archaeology	Systematic and environmental biology	Astrophysics and earth sciences	Museum programs	Grant Administration	Total
India	$6,932	$262	$236	$42	$632*	$8,104
Pakistan	1,095	10	15	-	7	1,127
Burma	-	5	-	1	-	6
Guinea	21	-	-	-	-	21
Total	$8,048	$277	$251	$43	$639	$9,258

*Includes $475,500 for translation services in support of all programs.

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Table 9. Construction and Plant Funds Fiscal Years 1983-1985
(In $1,000s)

Sources	FY 1983	FY 1984	FY 1985
FUNDS PROVIDED			
Federal Appropriations:			
National Zoological Park	$ 1,550	$ 3,500	$ 4,851
Restoration and Renovation of Buildings	8,450	9,000	13,475
Quadrangle	36,500	(8,000)	-
Total Federal Appropriations	46,500	4,500	18,326
Nonappropriated Trust Funds:			
Income - Gift and Other			
Smithsonian Environmental Research Center-Gain on Sale	44	-	-
Smithsonian Tropical Research Institute-Research Facilities	66	20	373
Erection of Jacksonville Bandstand	174	12	3
Cooper-Hewitt Museum	163	32	2,544
American Art and Portrait Gallery Building Quadrangle and Related	21	21	20
Smithsonian Institution Building South Entrance	14,574	8,098	1,908**
Belmont Conference Center-Gain on Sale	5	3	1
Horticulture Antique Greenhouse	1,405*	-	-
Total Income	-	16	-
	16,452	8,202	4,849
Transfers from Current Funds:			
National Museum of African Art	24	24	20
Quadrangle	2,040	2,700	-
East Garden	5	-	-
Secretaries' Residence	-	700	-
Total Transfers	2,069	3,424	20
Total Funds Provided	$65,021	$16,126	$23,195

*Total proceeds realized of $1,993,000; of which $1,750,000 was directed to construction of the Museum Support Center and $208,000 was transferred to endowment funds.

**In the application of Plant Funds for this project, a $4,000,000 pledge receivable was written off as uncollectible.

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TABLE 10. Endowment and Similar Funds September 30, 1985

	Book Value	Market Value
ASSETS		
Pooled Consolidated Endowment Funds:		
Cash and Equivalents	$ 19,351,107	$ 19,351,107
Bonds	9,464,055	10,399,674
Convertible Bonds	3,753,813	3,266,500
Stocks	103,587,334	114,282,790
Total Pooled Funds	136,156,309	147,300,071
Nonpooled Endowment Funds:		
Loan to U.S. Treasury in Perpetuity	1,000,000	1,000,000
Notes Receivable	40,754	40,754
Bonds	10,000	10,226
Land, Net	237,000	237,000
Total Nonpooled Funds	1,287,754	1,287,980
Total Endowment and Similar Fund Balances	$137,444,063	$148,588,051
FUND BALANCES		
Unrestricted Purpose: True Endowment	$ 4,537,800	$ 5,469,631
Quasi Endowment	58,957,335	61,073,858
Total Unrestricted Purpose	63,495,135	66,543,485
Restricted Purpose: True Endowment	54,875,497	61,360,250
Quasi Endowment	19,073,431	20,684,316
Total Restricted Purpose	73,948,928	82,044,566
Total Endowment and Similar Fund Balances	$137,444,063	$148,588,051

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TABLE 11. Market Values of Pooled Consolidated Endowment Funds
(In $1,000s)

FUND	9/30/81	9/30/82	9/30/83	9/30/84	9/30/85
Unrestricted.....	$30,399	$35,974	$ 54,677	$ 56,592	$ 65,404
Frean.....	20,472	22,596	32,096	31,125	34,066
Other Restricted..	27,101	30,288	43,911	43,396	47,830
Total.....	$77,972	$88,858	$130,684	$131,113	$147,300

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TABLE 12. Changes in Pooled Consolidated Endowment Funds for Fiscal Year 1985
(In $1,000s)

Fund	Market value 9/30/84	Gifts and trans-fers	Inter-est and divi-dends*	Income paid out	Sub-total	Market value appre-ciation	Market value 9/30/85
Unrestricted....	$ 56,592	$3,056	$2,885	$1,583	$ 60,950	$ 4,454	$ 65,404
Freer.....	31,125	-	1,582	1,131	31,576	2,490	34,066
Other Restricted	43.396	332	2.212	1.581	44.359	3.471	47.830
Total.....	$131.113	$3.388	$6.679	$4.295	$136.885	$10.415	$147.300

*Income earned, less managers' fees of $555,507

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TABLE 13. Endowment Funds September 30, 1959

	Principal		Income	
	Book value	Market value	Net income	Unexpended balance
UNRESTRICTED PURPOSE-TRUE:				
Avery Fund[2]	$ 152,106	$ 187,057	$ 4,968	$ -0-
Higbee, Harry, Memorial	84,544	94,691	1,342	-0-
Hodgkins Fund[2]	248,869	262,753	9,548	-0-
Morron, Dwight W.	267,624	336,438	8,298	-0-
Mussinan, Alfred	83,862	98,386	2,415	-0-
Olmsted, Helen S.	2,000	3,434	84	-0-
Poore, Lucy T. and George W.[2]	596,599	746,573	19,042	-0-
Porter, Henry Kirke, Memorial	989,580	1,242,312	38,494	-0-
Sanford, George H.[2]	4,293	5,070	154	-0-
Smithson, James[2]	599,277	596,747	29,250	-0-
Walcott, Charles D. and Mary Vaux, Research (Designated)	1,542,246	1,936,175	49,053	29,575
Subtotal	4,577,800	5,269,631	174,578	29,575
UNRESTRICTED PURPOSE-QUASI:				
Forrest, Robert Lee	3,845,479	3,743,819	91,895	-0-
General Endowment[2]	50,218,718	52,388,962	1,229,531	-0-
Goddard, Robert H.	30,435	29,649	728	-0-
Habel, Dr. S.[2]	983	951	27	-0-
Hart, Gustavus E.	1,962	2,219	54	-0-
Henry, Caroline	4,855	5,472	134	-0-
Henry, Joseph and Harriet A.	195,247	218,870	5,372	-0-
Hoyo, Maude C.	369,205	364,290	8,942	-0-
Hinton, Carrie Susan	99,435	106,568	2,616	-0-
Lambert, Paula C.	179,215	199,512	4,799	-0-
Medinus, Grace L.	3,698	3,626	89	-0-
Rhees, William Jones[2]	2,942	2,772	83	-0-
Safford, Clara Louise	168,811	170,198	4,177	-0-
Smithsonian Bequest Fund[2]	742,795	795,293	13,825	-0-
Taggart, Genaco	1,673	2,073	51	-0-
Abbott, William L.(Designated)	457,303	514,463	17,081	31,998
Barstow, Frederic D.(Designated)	3,828	4,309	143	5,953
Lindbergh Chair of Aerospace History (Designated)	1,754,572	1,781,810	99,159	86,859
Lindbergh, Charles A.(Designated)	15,114	16,519	1,324	9,342
Lyon, Marcus Ward, Jr.(Designated)	15,184	15,338	909	2,666
Webb, James E., Fellowship (Designated)	836,683	731,683	23,955	25,722
Subtotal	59,957,135	61,973,859	1,651,593	156,741
Total Unrestricted Purpose	$ 64,534,135	$ 66,243,385	$1,826,072	$186,316
RESTRICTED PURPOSE - TRUE:				
Arthur, James	$ 132,906	$ 168,307	$ 5,395	$ 5,619
Baird, Spencer Fullerton	130,303	150,628	5,001	6,699
Barney, Alice Pike, Memorial	99,277	120,753	4,009	20,909
Batchelor, Emma F.	119,609	124,906	4,147	71,076
Beauregard, Catherine, Memorial	150,197	168,742	5,603	52,296
Bergen, Charlotte V.	13,010	12,471	414	1,135
Brown, Roland W.	101,269	115,809	3,845	14,962
Canfield, Frederick A.	136,898	185,696	6,164	293
Casey, Thomas Lincoln	88,096	94,099	1,796	4,717
Chamberlain, Frances Lea	93,598	118,564	3,937	21,629
Cooper Fund for Paleobiology	97,376	98,176	3,127	-0-
Division of Mammals Curators Fund	6,927	7,517	250	4,384
Drake Foundation	622,142	663,348	21,928	95,275
Drouet, Francis and Loudertack, Harold S. Fund	208,645	261,393	6,612	27,842
Dykes, Charles, Bequest	179,995	198,945	6,605	21,799
Eichelberger, Florence Brevoort	36,102	45,747	1,519	22,738
Freer, Charles L.	39,352,306	39,065,589	1,131,090	911,194
Grimm, Sergei S.	109,436	106,730	3,544	14,188
Green, Harrick V.	112,249	107,438	3,117	4,368
Guggenheim, Daniel and Florence	427,700	439,874	14,472	32,419
Hamilton, James [2]	4,193	4,378	134	1,625
Henderson, Edward P., Meteorite Fund	1,297	1,499	50	450
Hewitt, Eleanor G., Repair Fund	25,783	27,489	910	946
Hewitt, Sarah Cooper	152,431	161,736	5,370	9,666

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TABLE 13. Endowment Funds September 30, 1989

	Principal		Income	
	Book value	Market value	Net income	Unexpended balance
Milliyer, Virgil[1]	29,220	28,370	992	10,126
Pitchcock, Albert S.	3,289	6,790	224	251
Pregelius Fund[2]	110,619	110,194	5,440	33,981
Prelicka, Ales and Marie	193,437	209,784	6,951	12,114
Hughes, Bruce	62,624	80,684	2,079	14,952
Johnson, Howard, Trust Fund for Oceanography	12,963,458	14,162,420	478,417	119,964
Kellogg, Remington, Memorial	87,638	87,305	2,981	8,917
Kraus, Hans	10,080	11,029	366	3,528
Lindsey, Jessie P.[2]	12,546	13,008	1,172	9,630
Maxwell, Max E.	69,193	82,449	2,745	28,591
Milliken, H. Cothout, Memorial	760	805	27	51
Mineral Endowment	349,701	371,264	12,327	411
Mitchell, William P.	47,112	50,709	1,681	490
Natural History and Conservation.	91,427	99,872	3,027	-0-
Nelson, Edward William	76,431	93,615	3,108	9,993
Petrocelli, Joseph, Memorial	79,684	11,357	1,041	27,872
Reid, Addison T.[2]	80,393	88,837	3,146	10,907
Roebling Fund	400,111	505,703	15,790	921
Rollins, Miriam and William	778,231	984,985	29,767	4,490
Sims, George W.	81,499	77,289	2,397	3,077
Sprague Fund	5,077,848	5,811,148	177,991	9,421
Springer, Frank	59,833	75,462	2,509	25,293
Starr, Harold P., Memorial	611,950	647,602	18,847	66,298
Stevenson, John A., Mycological Library	18,421	20,617	685	1,777
Walcott, Charles D. and Mary Vaux, Research	901,439	971,918	18,779	13,332
Walcott Research Fund, Botanical Publications	189,888	255,241	8,249	6,449
Williston, Samuel Wendell Diptera Research	11,964	12,203	390	1,692
Zerbee, Frances Brinckle	7,132	7,968	132	5,137
Subtotal	24,275,487	41,361,259	2,033,956	1,758,100
RESTRICTED PURPOSE-CHAIR:				
Armstrong, Edwin James	11,833	12,419	405	-0-
Au Panier Fleuri	71,587	69,826	2,318	2,435
Bacon, Virginia Purdy	331,299	350,451	11,635	23,302
Becker, George F.	571,687	646,582	20,140	-0-
Bassatels, Paul E.	43,117	47,863	1,590	-0-
Gayer, Gordon	4,981	4,833	164	2,187
Lachenberg, George P. and Caroline	15,906	18,438	612	1,979
Hanson, Martin Gustav and Caroline E.	39,102	38,396	1,273	6,373
Hunterdon Endowment	11,349,434	12,600,734	414,369	159,995
ICSP Endowment	679,610	674,785	21,010	11,816
ICSP Conservation Endowment	151,657	149,260	4,899	6,580
Johnson, E. R. Fontaine	78,225	88,393	993	3,951
Lamb, Morris	336,549	388,186	12,629	30,010
Long, Annette E. and Edith C.	1,830	2,399	78	368
Myer, Catherine Waldon	77,569	87,165	2,894	13,797
Noyes, Frank B.	3,812	4,393	146	2,649
Noyes, Pauline Riggs	37,677	38,983	1,292	1,146
Pell, Cornelia Livingston	28,538	32,179	1,048	2,962
Ramsey, Adm. and Mrs. Dewitt Clinton[2]	1,088,946	1,099,883	37,188	2,972
Rathbun, Richard, Memorial	40,915	46,107	1,531	19,617
Roebling Solar Research	91,587	99,130	3,291	8,629
Rhoads, Bertha M.	110,042	110,646	3,670	12,108
Schmitt, Leonard F.	29,715	33,393	1,107	27,898
Seidell, Atherton	2,864,387	2,396,497	79,566	398,779
Smithsonian Agency Account	1,133,586	1,133,327	39,369	187
Strong, Julia P.	38,453	43,395	1,439	2,238
Witherspoon, Thomas A., Memorial	599,617	685,813	19,837	39,433
Subtotal	19,977,431	20,659,756	687,671	843,431
Total Restricted Purpose	$ 73,948,529	$ 82,021,015	$2,721,627	$2,601,531
TOTAL ENDOWMENT FUNDS	$137,548,043	$168,588,051	$5,397,731**	$4,630,733

*Invested all or in part in U.S. Treasury or other commingled investments.
**Total Return Income Payout; does not include $240,000 of interest income for investment of unexpendable income balances.

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Coopers
&Lybrand

certified public accountants

To the Board of Regents
Smithsonian Institution

We have examined the statement of financial condition of the Smithsonian Institution as of September 30, 1985 and the related statement of financial activity for the year then ended. Our examination was made in accordance with generally accepted auditing standards and with generally accepted governmental auditing standards and, accordingly, included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances. We previously examined and reported upon the financial statements of the Smithsonian Institution for the year ended September 30, 1984, totals of which are included in the accompanying financial statements for comparative purposes only.

In our opinion, the financial statements for the year ended September 30, 1985, referred to above, present fairly the financial position of the Smithsonian Institution as of September 30, 1985, and the results of its operations and changes in its fund balances for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Coopers & Lybrand

1800 M Street, N. W.
Washington, D. C. 20036
December 18, 1985

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SMITHSONIAN INSTITUTION
STATEMENT OF FINANCIAL CONDITION
September 30, '985
(with comparative totals for September 30, '984)
(thousands of dollars)

	Trust funds	Federal funds	Totals, all funds	Totals, '984
Assets:				
Cash on hand and in banks (Note 3)	$ 2,207	$ '0	$ 2,2'7	$ 3,837
Fund balances with U. S. Treasury (Note 4)	620	72,528	73,'48	69,4'1
Investments (Notes ' and 5)	'92,602	-	'92,602	'66,806
Receivables (Note 7)	40,'69	474	40,643	45,802
Advance payments (Note 8)	452	'6,'15	'6,567	'3,832
Merchandise inventory (Note ')	'1,340	-	'1,340	8,902
Materials and supplies inventory (Note ')	-	',340	',340	3,266
Amount to be provided for accrued annual leave (Note ')	-	7,658	7,658	7,'24
Prepaid, deferred expense and other (Note ')	'3,400	-	'3,400	'1,573
Property and equipment (Notes ' and 9)	34,334	20',355	235,689	208,20'
Total assets	$295,'24	$299,480	$594,604	$538,758
Liabilities:				
Accounts payable and accrued expenses, including interfund payable of $'8,940	$ 34,'57	$ '6,'50	$ 50,307	$ 45,09'
Deposits held in custody for other organizations (Note 2)	3,9'2	25	3,937	3,084
Accrued annual leave (Note ')	',664	7,658	9,322	8,459
Deferred revenue (Note ')	28,'33	-	28,'33	24,8'5
Total liabilities	67,866	23,833	9',699	8',449
Undelivered orders (Note ')	-	57,425	57,425	62,597
Fund balances (Note '):				
Trust funds:				
Current:				
Unrestricted general purpose	5,'38	-	5,'38	5,086
Special purpose	23,832	-	23,832	'6,'05
Restricted	9,684	-	9,684	9,097
Endowment and similar funds (Note 6)	'37,444	-	'37,444	'18,'53
Plant funds (Note 9)	5','60	-	5','60	50,449
Total trust fund balances	227,258	-	227,258	'98,890
Federal funds:				
Operating funds	-	'77	'77	'75
Construction funds	-	'5,349	'5,349	9,427
Capital funds	-	202,696	202,696	'86,2'6
Total federal fund balances	-	2'8,222	2'8,222	'95,8'8
Total fund balances	227,258	2'8,222	445,480	394,708
Total liabilities, undelivered orders and fund balances	$295,'24	$299,480	$594,604	$538,758

The accompanying notes are an integral part of these financial statements.

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SMITHSONIAN INSTITUTION

STATEMENT OF FINANCIAL ACTIVITY

for the year ended September 30, 1985

(with comparative totals for the year ended September 30, 1984)

(thousands of dollars)

	Trust funds				Federal funds					
	Totals, trust funds	Current funds	Endowment and similar funds	Plant funds	Totals, federal funds	Operating funds	Construction funds	Capital funds	Totals, all funds	Totals, 1984
Revenue and other additions:										
Appropriations, net	$ -	$ -	$ -	$ -	$191,467	$173,141	$18,326	$ -	$191,467	$168,223
Auxiliary activities revenue	130,010	130,010	-	-	-	-	-	-	130,010	114,852
Federal grants and contracts	15,652	15,652	-	-	-	-	-	-	15,652	14,076
Investment income (net of $956,000 for management and custodian fees)	12,658	10,821	-	1,837	-	-	-	-	12,658	11,902
Net gain on sale of securities and property	15,795	71	13,539	2,135	-	-	-	-	15,795	8,509
Gifts, bequests and foundation grants	9,782	8,692	173	877	-	-	-	-	9,782	15,089
Additions to plant (Note 9)	10,167	-	-	10,167	32,897	-	-	32,897	43,064	23,133
Rentals, fees, commissions and other	3,282	3,282	-	-	137	137	-	-	3,419	3,131
Total revenue and other additions	205,254	176,528	13,712	15,016	229,501	173,278	18,326	32,897	429,757	359,711
Expenditures and other deductions:										
Research and educational expenditures	35,660	35,660	-	-	114,017	114,017	-	-	149,677	137,591
Administrative expenditures	11,058	11,058	-	-	12,046	12,046	-	-	23,104	23,385
Facilities services expenditures	1,575	1,575	-	-	47,040	47,040	-	-	48,615	46,822
Auxiliary activities expenditures	118,270	118,270	-	-	-	-	-	-	118,270	93,632
Acquisition of plant and other (Note 9)	13,567	-	-	13,567	12,404	-	12,404	-	25,971	16,938
Property use and retirements (Note 9)	738	-	-	738	16,417	-	-	16,417	17,155	15,043
Retirement of indebtedness	5	-	-	5	-	-	-	-	5	6
Interest on indebtedness	15	-	-	15	-	-	-	-	15	18
Total expenditures and other deductions	176,888	166,563	-	14,325	201,924	173,103	12,404	16,417	378,812	333,435
Excess of revenue and other additions over expenditures and other deductions	28,366	13,965	13,712	691	27,577	175	5,922	16,480	50,945	26,276
Transfers among funds - additions (deductions):										
Mandatory principal and interest on notes	-	(20)	-	20	-	-	-	-	-	-
Nonmandatory for designated purposes, net (Note 10)	-	(5,579)	5,579	-	-	-	-	-	-	-
Total transfers among funds	-	(5,599)	5,579	20	-	-	-	-	-	-
Net increase for the year	28,366	8,366	19,291	711	27,577	175	5,922	16,480	50,945	26,276
Returned to U. S. Treasury	-	-	-	-	(173)	(173)	-	-	(173)	(102)
Fund balances at beginning of year	198,890	30,288	118,153	50,449	195,818	175	9,427	166,216	394,708	368,534
Fund balances at end of year	$227,256	$ 38,654	$137,444	$51,160	$223,222	$ 177	$15,349	$202,696	$445,480	$394,708

The accompanying notes are an integral part of these financial statements.

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SMITHSONIAN INSTITUTION
NOTES TO FINANCIAL STATEMENTS

1. Summary of significant accounting policies

Basis of presentation

These financial statements do not include the accounts of the National Gallery of Art, the John F. Kennedy Center for the Performing Arts or the Woodrow Wilson International Center for Scholars, which were established by Congress within the Smithsonian Institution (the Institution) but are administered under separate boards of trustees.

The federal funds reflect the receipt and expenditures of funds obtained from Congressional appropriations. The accounts of the federal funds have been prepared on the obligation basis of accounting, which is in accordance with accounting principles prescribed by the Comptroller General of the United States as set forth in the Policy and Procedures Manual for Guidance of Federal Agencies. The obligation basis of accounting differs in some respects from generally accepted accounting principles. Under this method of accounting, commitments of the operating fund, such as purchase orders and contracts, are recognized as expenditures, and the related obligations are reported on the balance sheet even though goods and services have not been received as of the date of the financial statements. Such commitments aggregated $39,147,000 at September 30, 1985. In addition, construction commitments amounted to $18,279,000 at September 30, 1985.

The trust funds reflect the receipt and expenditure of funds obtained from private sources, federal grants and contracts, investment income and certain business activities related to the operations of the Institution.

Continued

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SMITHSONIAN INSTITUTION
NOTES TO FINANCIAL STATEMENTS

Fund accounting

To ensure observance of the limitations and restrictions placed on the use of resources available to the Institution, accounts are maintained in accordance with the principles of fund accounting. This procedure classifies resources for control, accounting and reporting purposes into distinct funds established according to their appropriation, nature and purposes. Separate accounts are maintained for each fund; however, in the accompanying financial statements, funds that have similar characteristics have been combined into fund groups. Accordingly, all financial transactions have been recorded and reported by fund group.

The assets, liabilities and fund balances of the Institution are self-balancing as follows:

Federal operating funds represent the portion of expendable moneys available for support of Institution operations. Separate subfund groups are maintained for each appropriation as follows: Salaries and Expenses, Special Foreign Currency and Barro Colorado Island Trust Fund.

Federal construction funds represent that portion of expendable funds available for building and facility construction, restoration, renovation and repair. Separate subfund groups are maintained for each appropriation - Construction and Improvements, National Zoological Park, Restoration and Renovation of Buildings, Museum Support Center and the Center for African, Near Eastern, and Asian Cultures (Quadrangle).

Federal capital funds represent the value of those assets of the Institution acquired with federal funds and nonexpendable property transfers from government agencies.

Trust current funds, which include unrestricted and restricted resources, represent the portion of expendable funds that is available for

Continued

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SMITHSONIAN INSTITUTION
NOTES TO FINANCIAL STATEMENTS

support of Institution operations. Amounts restricted by the donor for specific purposes are segregated from other current funds.

Trust endowment and similar funds include funds that are subject to restrictions of gift instruments requiring in perpetuity that the principal be invested and the income only be used. Also classified as endowment and similar funds are gifts which allow the expenditure of principal but only under certain specified conditions. Quasi-endowment funds are funds established by the governing board for the same purposes as endowment funds; however, any portion of such funds may be expended. Restricted quasi-endowment funds represent gifts for restricted purposes where there is no stipulation that the principal be maintained in perpetuity or for a period of time, but the governing board has elected to invest the principal and expend only the income for the purpose stipulated by the donor.

Trust plant funds represent resources restricted for future plant acquisitions and funds expended for plant. Pledges for the construction of the Center for African, Near Eastern, and Asian Cultures are recorded as gifts in the plant fund in the period the pledge document is received.

Investments

All gains and losses arising from the sale, collection or other disposition of investments and property are accounted for in the fund in which the related assets are recorded. Income from investments is accounted for in a similar manner, except for income derived from investments of endowment and similar funds, which is accounted for in the fund to which it is restricted or, if unrestricted, as revenue in unrestricted current

Continued

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SMITHSONIAN INSTITUTION
NOTES TO FINANCIAL STATEMENTS

funds. Gains and losses on the sale of investments are recognized on the settlement date basis using the specific identification method, whereby the cost of the specific security adjusted by any related discount or premium amortization is the basis for recognition of the gain or loss.

Inventory

Inventories are carried at the lower of cost or market. Cost is determined using the first-in, first-out (FIFO) method, retail cost method (for those inventories held for resale) or net realizable value.

Deferred revenue and expense

Revenue from subscriptions to Smithsonian Magazine is recorded as income over the period of the related subscription, which is one year. Costs related to obtaining subscriptions to Smithsonian Magazine are charged against income over the period of the subscription.

The Institution recognizes revenue and charges expenses of other auxiliary activities during the period in which the activity is conducted.

Works of art, living or other specimens

The Institution acquires its collections, which include works of art, library books, photographic archives, objects and specimens, through purchase or by donation. In accordance with policies generally followed by museums, no value is assigned to the collections on the statement of financial condition. Purchases for the collections are expensed currently.

Property and equipment

Equipment purchased with federal funds is recorded at cost and is depreciated on a straight-line basis over a period of 10 years. Equipment

Continued

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SMITHSONIAN INSTITUTION
NOTES TO FINANCIAL STATEMENTS

purchased with trust funds for use by nonincome-producing activities is treated as a deduction of the current fund and a capitalized cost of the plant fund. Depreciation on equipment capitalized in the plant fund is recorded on a straight-line basis over the estimated useful life of 3 to 10 years (see Note 9). Capital improvements and equipment purchased with trust funds and utilized in income-producing activities are capitalized at cost and are depreciated on a straight-line basis over their estimated useful lives of 3 to 10 years.

Buildings and other structures, additions to buildings and fixed equipment purchased with federal funds are recorded at cost and depreciated on a straight-line basis over a period of 30 years. Costs associated with renovating, restoring and improving structures are depreciated over their useful lives of 15 years.

Certain lands occupied by the Institution's buildings were appropriated and reserved by Congress for the Smithsonian and are not reflected in the accompanying financial statements. Property and nonexpendable equipment acquired through transfer from government agencies are capitalized at the transfer price or at estimated amounts, taking into consideration usefulness,. condition and market value.

Real estate (land and buildings) purchased with trust funds is recorded at cost, to the extent that restricted or unrestricted funds were expended therefor, or appraised value at date of gift, except for gifts of certain islands in the Chesapeake Bay and the Carnegie Mansion, which have been recorded at nominal values. Costs of original building structures and major additions are depreciated on a straight-line basis over their estimated useful lives of 30 years. Costs of renovating, restoring and improving structures are depreciated on a straight-line basis over their estimated useful lives of 15 years (see Note 9).

Continued

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SMITHSONIAN INSTITUTION
NOTES TO FINANCIAL STATEMENTS

Government grants and contracts

The Institution has a number of grants and contracts with the U. S. Government, which primarily provide for cost reimbursement to the Institution. Grant and contract revenue is recognized when billed.

Contributed services

A substantial number of unpaid volunteers have made significant contributions of their time in the furtherance of the Institution's programs. The value of this contributed time is not reflected in these statements.

Annual leave

The Institution's civil service employees earn annual leave in accordance with federal law and regulations. However, only the cost of leave taken as salaries is funded and recorded as an expense. The cost of unused annual leave at year-end is reflected in the accompanying financial statements as an asset and accrued liability in the federal funds.

Annual leave is recorded for trust employees in the trust fund as earned.

2. Related activities

The Institution provides fiscal and administrative services to several, separately incorporated organizations in which certain officials of the Institution serve on the governing boards. The amounts paid to the Institution by these organizations for the aforementioned services, together with rent for Institution facilities occupied, etc., totaled approximately $354,000 ($281,000 for the trust funds and $73,000 for the federal funds) for the year ended September 30, 1985. Deposits held in custody for these organizations are $3,912,000 as of September 30, 1985.

Continued

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SMITHSONIAN INSTITUTION
NOTES TO FINANCIAL STATEMENTS

The following summarizes the approximate expenditures of these organizations for the fiscal year ended September 30, 1985 as reflected in their individual financial statements and which are not included in the accompanying financial statements of the Institution:

	($000s)
Visions Foundation, Inc.	$ 186
Reading Is Fundamental, Inc.	$6,617
Woodrow Wilson International Center for Scholars:	
Trust funds	$4,712
Federal appropriations	$2,672

3. Cash on hand

Cash on hand - federal funds represents the amount of cash advanced by the U. S. Treasury to imprest fund cashiers for small purchases.

4. Fund balances with U. S. Treasury

The account represents fund balances on the books of the U. S. Treasury available for disbursement.

Continued

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SMITHSONIAN INSTITUTION

NOTES TO FINANCIAL STATEMENTS

5. Investments

Investments are recorded at cost on a settlement date basis, if purchased, or estimated fair market value at date of acquisition, if acquired by gift. At September 30, 1985, investments were composed of the following:

	Carrying value ($000s)	Market value ($000s)
Current funds:		
Certificates of deposit	$ 12,415	$ 12,412
Commercial paper	7,585	7,600
U. S. Government and quasi-government obligations	36,067	36,914
Corporate bonds	75	75
Common stock	13	5
Preferred stock	30	30
	56,185	57,036
Endowment and similar funds:		
Money market account	18,526	18,526
Deposit with U. S. Treasury	1,000	1,000
U. S. Government and quasi-government obligations	9,474	10,410
Corporate bonds	3,754	3,266
Common stock	100,203	111,191
Preferred stock	3,384	3,092
	136,341	147,485
Plant funds:		
U. S. Government and quasi-government obligations	26	27
Common stock	50	50
	76	77
	$192,602	$204,598

Since October 1, 1982, the deposit with the U. S. Treasury has been invested in U. S. Government securities at a variable yield based on market interest rates.

Continued

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SMITHSONIAN INSTITUTION
NOTES TO FINANCIAL STATEMENTS

Substantially all the investments of the endowment and similar funds are pooled on a market value basis (consolidated fund) with each individual fund subscribing to or disposing of units on the basis of the per unit market value at the beginning of the month within which the transaction takes place. The unit value as of September 30, 1985 was $223.18; 295,756 units were owned by endowment, and 364,248 units were owned by quasi-endowment at September 30, 1985.

The following tabulation summarizes changes in relationships between cost and market values of the pooled investments:

	($000s)			Market value per unit
	Market	Cost	Net change	
End of year	$147,300	$136,156	$11,144	$223.18
Beginning of year	$131,113	$116,860	14,253	203.92
Decrease in unrealized net gain for the year			(3,109)	-
Realized net gain for the year			13,525	-
Total			$10,416	$ 19.26

Continued

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SMITHSONIAN INSTITUTION
NOTES TO FINANCIAL STATEMENTS

6. Endowment and similar funds

Endowment and similar funds at September 30, 1985 are summarized as follows:

	($000s)
Endowment funds, income available for:	
Restricted purposes	$ 54,875
Unrestricted purposes	4,538
	59,413
Quasi-endowment funds, principal and income available for:	
Restricted purposes	19,073
Unrestricted purposes	58,958
	78,031
Total endowment and similar funds	$137,444

The Institution utilizes the "total return" approach to investment management of endowment funds and quasi-endowment funds. Under this approach, the total investment return is considered to include realized and unrealized gains and losses in addition to interest and dividends. An amount equal to the difference between interest and dividends earned during the year and the amount computed under the total return formula is transferred to or from the current funds.

In applying this approach, it is the Institution's policy to provide, as being available for current expenditures, an amount taking into consideration such factors as, but not limited to: (1) 4-1/2% of the five-year average of the market value of each fund (adjusted for gifts and transfers during this period), (2) current dividend and interest yield, (3) support needs for bureaus and scientists, and (4) inflationary factors as measured by the Consumer Price Index; however, where the market value of the assets of any endowment fund is less than 110% of the historic dollar value (value of gifts at date of donation), the amount provided is limited to only interest and dividends received. The total return factor for 1985 was $7.41 per unit to the

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SMITHSONIAN INSTITUTION
NOTES TO FINANCIAL STATEMENTS

Restricted and Designated Purpose Endowment Funds and $5.50 per unit to the Unrestricted General Purpose Endowment Funds; new units were purchased for the Unrestricted General Purpose Endowment Funds with the $1.91 difference in the total return factor. The total return applied for 1985 was $2,880,000 to the Restricted and Designated Purpose Endowment Funds and $1,416,000 to the Unrestricted General Purpose Endowment Funds.

7. Receivables

Receivables at September 30, 1985 included the following:

	($000s)
Trust funds	
Accounts receivable, auxiliary activities, net of allowance for doubtful accounts of $881,000	$11,899
Interfund receivables due from current funds:	
Endowment and similar funds	822
Plant funds	18,118
Interest and dividends receivable	2,104
Unbilled costs and fees from grants and contracts	1,081
Pledges	6,103
Other	42
	40,169
Federal funds	
Service fees and charges	474
Total, all funds	$40,643

Continued

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SMITHSONIAN INSTITUTION
NOTES TO FINANCIAL STATEMENTS

8. Advance payments

Advance payments represent prepayments made to government agencies, educational institutions, firms and individuals for services to be rendered or property or materials to be furnished.

As of September 30, 1985, the Institution had advances outstanding to the U. S. Government of approximately $13,902,000, principally for construction services to be completed in future fiscal years. The Institution at that date also had advances outstanding to educational institutions amounting to approximately $1,255,000, principally under the Special Foreign Currency Program.

9. Property and equipment

At September 30, 1985, property and equipment which have been capitalized (see Note 1) are comprised of the following:

	($000s)	($000s)
Federal		
Capital funds		
Property	286,904	
Equipment	31,004	
Less accumulated depreciation	(116,553)	
Total, federal funds		201,355

Continued

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SMITHSONIAN INSTITUTION
NOTES TO FINANCIAL STATEMENTS

	($000s)	($000s)
Trust		
Current funds		
Capital improvements	$ 4,699	
Equipment	6,828	
Leasehold improvements	235	
Less accumulated depreciation and amortization	(5,340)	
	6,422	
Endowment and similar funds		
Land	239	
Plant funds		
Land and buildings	$ 31,550	
Equipment	2,985	
Less accumulated depreciation	(6,862)	
	27,673	
Total, trust funds		34,334
Total, all funds		$ 235,689

Depreciation expense reflected in expenditures of the federal capital funds for 1985 was approximately $13,181,000.

Depreciation and amortization expense for 1985 for trust funds' income-producing assets amounted to approximately $1,508,000, which is included in auxiliary activities expenditures in the current funds. Depreciation of trust funds' nonincome-producing equipment and buildings for 1985 amounted to approximately $738,000.

During 1985, the trust unexpended plant funds were reduced by $4,000,000 for a pledge deemed not collectible. The balance of the plant fund at September 30, 1985 included $23,640,000 of trust unexpended plant funds.

Continued

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SMITHSONIAN INSTITUTION
NOTES TO FINANCIAL STATEMENTS

10. Nonmandatory transfers for designated purposes

The following transfers among trust funds were made for the year ended September 30, 1985 in thousands of dollars:

	Current funds		Endowment and similar funds
	Unrestricted	Restricted	
Portion of investment yield appropriated (Note 6)	$(1,350)	$(1,086)	$2,436
Income added to endowment principal	(4)	(139)	143
Endowment released	-	36	(36)
Appropriated as quasi-endowment	(3,009)	(27)	3,036
Total	$(4,363)	$(1,216)	$5,579

11. Retirement plans

The federal employees of the Institution are covered by the Civil Service Retirement Program. Under this program, the Institution withholds from the gross pay of each federal employee and remits to the Civil Service Retirement and Disability Fund (the Fund) the amounts specified by such program. The Institution contributes 7% of basic annual salary to the Fund. The cost of the plan for the year ended September 30, 1985 was approximately $6,575,000.

The Institution has separate retirement plans for trust and federal employees. Under the trust fund's plan, both the Institution and employees contribute stipulated percentages of salary which are used to purchase individual annuities, the rights to which are immediately vested with the employees. The cost of the plan for the year ended September 30, 1985 was $3,330,000. It is the policy of the Institution to fund plan costs accrued currently. There are no unfunded prior-service costs under the plan.

Continued

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SMITHSONIAN INSTITUTION
NOTES TO FINANCIAL STATEMENTS

12. Income taxes

The Institution is exempt from income taxation under the provisions of Section 501(c)(3) of the Internal Revenue Code. Organizations described in that section are taxable only on their unrelated business income, which was immaterial for the Institution in 1985.

It is the opinion of the Institution that it is also exempt from taxation as an instrumentality of the United States as defined in Section 501(c)(1) of the Code. Organizations described in that section are exempt from all income taxation. The Institution has not as yet formally sought such dual status.

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Unit	FY 1986 APPROPRIATION ($000s)				
	PL 99-177 /1	FY 1986 Congressional Appropriation /2	Reorganizations & Reprogrammings	Grade Target Reduction /3	Revised FY 1986 Appropriation /4
SCIENCE					
Asst. Secretary for Science	564	589	(99) /5	(2)	488
National Museum of Natural History	20,268	21,179	0	(75)	21,104
Astrophysical Observatory	8,349	8,724	0	(28)	8,696
Tropical Research Institute	3,643	3,807	0	(9)	3,798
Environmental Research Center	3,383	3,535	0	(7)	3,528
National Air and Space Museum	8,171	8,538	0	(23)	8,515
National Zoological Park	11,043	11,539	0	(20)	11,519
Subtotal, Science	55,421	57,911	(99)	(164)	57,648
HISTORY AND ART					
Asst. Secretary for History and Art	424	443	(77) /6	(2)	364
National Museum of American History	11,342	11,852	101 /5 /6	(41)	11,912
National Museum of American Art	4,600	4,807	0	(14)	4,793
National Portrait Gallery	3,446	3,601	0	(10)	3,591
Hirshhorn Museum and Sculpture Garden	2,985	3,119	0	(7)	3,112
Center for Asian Art	2,946	3,078	0	(4)	3,074
Archives of American Art	858	897	0	(3)	894
Cooper-Hewitt Museum	903	943	0	(1)	942
National Museum of African Art	2.513	2,626	0	(3)	2,623
Anacostia Neighborhood Museum	852	890	0	(2)	888
Subtotal, History and Art	30,869	32,256	24	(87)	32,193
PUBLIC SERVICE					
Asst. Secretary for Public Service	1,190	1,243	(34) /7	(5)	1,204
Smithsonian Institution Press	1,078	1,126	0	(5)	1,121
Subtotal, Public Service	2,268	2,369	(34)	(10)	2,325
MUSEUM PROGRAMS					
Asst. Secretary for Museum Programs	703	735	(5) /8	(2)	728
Office of the Registrar	95	99	0	0	99
Conservation Analytical Laboratory	1,945	2,033	(5) /8	(9)	2,019
Smithsonian Institution Libraries	4,455	4,655	20 /8 /9	(11)	4,664
Office of Exhibits Central	1,543	1,613	(5) /8	(5)	1,603
Traveling Exhibition Service	363	379	30 /8	(2)	407
Smithsonian Institution Archives	518	541	0	(2)	539
National Museum Act	739	772	0	0	772
Subtotal, Museum Programs	10,361	10,827	35	(31)	10,831

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Unit	PL 99-177 /1	FY 1986 Congressional Appropriation /2	Reorganizations & Reprogrammings	Grade Target Reduction /3	Revised FY 1986 Appropriation /4
DIRECTORATE OF INTERNAT'L ACTIVITIES	441	461	68 /10	(2)	527
SPECIAL PROGRAMS					
American Studies & Folklife Programs	681	712	0	(1)	711
International Environmental Science	697	728	0	0	728
Academic & Educational Programs	738	771	(68) /10	(2)	701
Collections Management/Inventory	1,073	1,121	0	0	1,121
Museum Support Center	4,680	4,891	0	0	4,891
John F. Kennedy Center Grants	333	348	0	0	348
Subtotal, Special Programs	8,202	8,571	(68)	(3)	8,500
ADMINISTRATION	11,435	11,949	131 /5 /7 /11	331	12,411
FACILITIES SERVICES					
Office of Design and Construction	2,009	2,099	0	(11)	2,088
Office of Protection Services	17,365	18,145	0	(13)	18,132
Office of Plant Services	31,013	32,407	(57) /8 /9 /10 /11	(10)	32,340
Subtotal, Facilities Services	50,387	52,651	(57)	(34)	52,560
GRAND TOTAL, SMITHSONIAN	169,384	176,995	0	0	176,995

/1 Balanced Budget and Emergency Deficit Control Act of 1985 (4.3 percent of FY 1986 Congressional Appropriation).

/2 Reductions of $250 thousand for scientific equipment and $217 thousand for automation have been distributed as follows: Equipment - National Museum of Natural History ($110,000); Tropical Research Institute ($50,000); and Environmental Research Center ($90,000). Automation - National Museum of American History ($58,000); National Museum of American Art ($28,000); National Portrait Gallery ($20,000); Hirshhorn Museum and Sculpture Garden ($23,000); Sackler Gallery ($18,000); Archives of American Art ($20,000); Cooper-Hewitt Museum ($25,000); and National Museum of African Art ($25,000).

/3 Reflects the distribution of the Office of Management and Budget Grade Target Reduction for FY 1986. The full reduction of $373 thousand had been reflected in the Administration line-item in the FY 1986 request.

/4 Reflects FY 1986 Base Appropriation shown on pages 12 and 13 of this budget request.

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/5 Permanent reprogramming of 3 positions from the Office of Educational Research to other educational and support activities (National Museum of American History ($24,000) and Administration ($75,000)).

/6 Permanent reprogramming of an historian from Joseph Henry Papers to the National Museum of American History.

/7 Permanent reprogramming of a position from the Assistant Secretary for Public Service to Administration.

/8 Permanent reprogrammings from several Museum Program bureaus and offices to the Traveling Exhibition Service to cover a small base shortage.

/9 Permanent reprogramming of a position for a librarian from the Office of Horticulture to the Smithsonian Institution Libraries.

/10 The administration of the Special Foreign Currency Program was transferred from the Office of Fellowships and Grants to the Directorate of International Activities.

/11 Permanent reprogramming of one position from the Office of Plant Services to Administration.

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NATIONAL GALLERY OF ART
"SALARIES AND EXPENSES"
FEDERAL BUDGET ESTIMATES FOR FISCAL YEAR 1987
CONGRESSIONAL

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HISTORICAL SUMMARY

The National Gallery of Art is an institution established for the display of works of fine art of the highest quality for the benefit of the nation's citizenry and visitors from other nations. Attendance in recent years has averaged over 5,000,000 persons annually from all of the United States and from 50 or more foreign countries. From its inception to this day, the National Gallery of Art has been supported both by the Federal government and private individuals and institutions.

The National Gallery of Art had its beginnings almost 50 years ago, when Andrew W. Mellon first proposed to President Franklin D. Roosevelt that Mr. Mellon donate the necessary sums to build such an institution and that his private collection form the nucleus of its collections. As conceived, this gallery would develop an art collection from private donations; for its part, the Federal government would appropriate a site for the Gallery and provide funds annually for the care of the art collection, upkeep of the physical premises of the Gallery and administrative expenses.

This concept of mutual public and private support for a future National Gallery is contained in early correspondence between Andrew Mellon and President Roosevelt. In his letter of December 22, 1936 to the President, Mr. Mellon states...

> "...In addition to the gift of the art collection and a building in which it and similar collections may be housed and displayed, I plan also to establish an endowment fund for the proposed gallery, the income from which shall be used to pay the annual salaries of a director, assistant director, secretary and curators of the gallery, and for possible art acquisitions. The upkeep of the building and other administrative expenses and cost of operation would be provided in appropriations made by Congress..."

Acceptance of this premise is contained in Section 4(a) of the Joint Resolution of Congress of March 24, 1937 (20 U.S.C. 71-75), which established the National Gallery and states in part:

> "The faith of the United States is pledged that...the United States will provide such funds as may be necessary for the upkeep of the National Gallery of Art and the administrative expenses and costs of operation thereof, including the protection and care of works of art acquired by the Board, so that the National Gallery of Art shall be at all times properly maintained and the works of art contained therein shall be exhibited regularly

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to the general public free of charge. For these purposes there are hereby authorized to be appropriated such sums as may be necessary."

The West Building of the National Gallery of Art, designed by John Russell Pope, with 530,000 square feet of interior space, was opened to the general public on March 17, 1941. President Roosevelt and Paul Mellon, representing the founder after the death of Andrew Mellon, presided at the building's dedication.

On this occasion President Roosevelt said,

"In accepting this building and the paintings it contains, the people of the United States accept a part in that inheritance for themselves. They accept it for themselves not because this Gallery is given to them - though they are thankful for the gift. They accept it for themselves because in the past few years, they have come to understand that the inheritance is theirs and that, like other inheritors of things of value, they have a duty toward it. It signifies a relation - a new relation here made visible in paint and in stone - between the whole people of this country, and the old inherited tradition of the arts."

Beginning in 1971, the construction of the East Building and the connecting link between the two buildings was commenced on an adjoining site previously reserved by the 1937 Joint Resolution of Congress for expansion of the National Gallery of Art. The building footage provided the Gallery an additional 591,000 square feet of interior space. The entire funding for the construction of the East Building and the connecting link to the West Building, was provided by generous donations from Paul Mellon, the late Ailsa Mellon Bruce, and The Andrew W. Mellon Foundation.

The East Building was accepted on behalf of the people of the United States on June 1, 1978, at a ceremony presided over by President Carter and Paul Mellon, President of the Gallery. On this occasion, President Carter spoke again of the joint public and private support upon which the continued quality of the National Gallery of Art depends:

"Because we are committed to an open and flexible relationship, support for the arts and humanities flows through many different kinds of channels, leaving room for art and scholarship to develop naturally.

This gallery, for example, is maintained at public expense, but it owes its existence to acts of private philanthropy. Moreover, its

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acquisition of works of art is financed entirely from private donations. It is equally significant that this building will serve both as a museum and as a center for art scholarship.

We have before us here, in concrete, marble, and glass, a tangible demonstration that excellence and access to a wide public are far from being contradictory. They are complementary. This building stands as a metaphor for what, at its best, the relationship between government and the arts can be."

Relocation of the administrative functions of the Gallery to the East Building permitted repair, renovation and restoration of the West Building. This undertaking not only provided for a complete refurbishing of the electrical and mechanical services of the West Building (which were almost 40 years old), but gave the Gallery enlarged space for exhibition of art, for sales activities and also made possible the efficient arrangement of other functions. For the first time, art arriving at the shipping dock was convenient to the art conservation activities which were now grouped in one area. With photography, conservation, receiving and registry located adjacent to each other, paintings and objects are now handled more safely and efficiently.

"Operation Breakthrough" opened 40,000 square feet of new gallery space on the ground floor of the West Building. This made possible the exhibition of some 2,000 works of art from the Gallery's collections which had been off public view. It also provided direct passage from 4th Street to 7th Street on the ground floor of the West Building and opened the 7th Street entrance to the public for the first time. In addition, it provided space for simultaneous series of temporary exhibitions of graphic arts, and greater flexibility in exhibition planning.

The new galleries were accepted for the nation by President Reagan on January 27, 1983. On this occasion President Reagan said,

"I am pleased to be here to honor Andrew Mellon and to celebrate another milestone in the realization of his vision of a National Gallery of Art - an American gallery created for the enrichment of all the people of the United States, and second to none in its commitment to excellence. Tonight we inaugurate some 40,000 square feet of new gallery space. It is a great privilege for me to share in this. President Roosevelt accepted the original gifts of the West Building and Mr. Mellon's collection in 1941, and President Carter accepted the East Building in 1978."

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The National Gallery of Art has earned a reputation for maintaining collections of a quality that place it among the great national galleries of the world. The art collection, which is irreplaceable and could never be duplicated in today's market, is generally regarded as priceless. The Gallery's collections have been and continue to be, assembled completely from private donations.

Since the Gallery's opening in 1941, its collections have grown to date as follows:

	1941	1985
Paintings	506	2,541
Sculptures	35	1,901
Works of Art on Paper	400	80,885
Decorative Arts Objects	-	529
Research Support Collections:		
Books and Documents	502	310,207
Photographic Images	3,000	3,867,597

Public interest in, and appreciation of, the National Gallery's permanent collections of art and special exhibitions of art from other collections around the world has increased dramatically in recent years. In a similar manner, the expansion of the Gallery's educational programs is in response to greater appreciation of art by the general public. The Gallery's programs distributed free, but for return postage, by its Department of Extension Services were seen by 125,569,314 persons in FY 85. So too has the Center for Advanced Study in the Visual Arts (CASVA) fulfilled a need for the nurturing of scholarship in art and art history, and the consequent enrichment of education across the country.

It is within this framework of continued expansion of the Gallery's program of carrying visual and educational appreciation of art to the public that we are pleased to submit our fiscal year 1987 request.

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GENERAL STATEMENT

Art Acquisitions: A total of 461 works of art were acquired to date during fiscal year 1985. These acquisitions include 430 prints and drawings.

Special Exhibitions: The following special exhibitions were held at the National Gallery of Art during fiscal year 1985.

Special Exhibitions

Loan Exhibitions: Fiscal Year 1985

OSLO EXCHANGE
April 1984 - April 1985

THE ORIENTALISTS: DELACROIX TO MATISSE, THE ALLURE OF NORTH AFRICA AND THE NEAR EAST
July 1 - October 28, 1985

JOHN JAMES AUDUBON: BIRDS OF AMERICA
October 14, 1984 - March 10, 1985

AMERICAN NAIVE WATERCOLORS AND DRAWINGS
October 14, 1984 - January 13, 1985

INDEX OF AMERICAN DESIGN
October 14, 1984 - January 27, 1985

THOMAS MORAN'S WATERCOLORS OF YELLOWSTONE
October 14, 1984 - January 27, 1985

OLD MASTER DRAWINGS FROM THE ALBERTINA
October 25, 1984 - January 13, 1985

GEMINI G.E.L.: ART AND COLLABORATION
November 18, 1984 - February 24, 1985

DEGAS: THE DANCERS
November 22, 1984 - March 10, 1985

MASTER PRINTS FROM WASHINGTON COLLECTIONS
November 24, 1984 - March 3, 1985

THE WASHINGTON FAMILY BY EDWARD SAVAGE: AN INAUGURAL CELEBRATION
January 13 - February 18, 1985

AMERICAN PAINTINGS FROM THE ARMAND HAMMER COLLECTION: AN INAUGURAL CELEBRATION
January 13 - February 18, 1985

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MONOTYPES BY MAURICE PRENDERGAST FROM THE TERRA MUSEUM OF AMERICAN ART
January 27 - April 14, 1985

LANDSCAPE PRINTS FROM THE COLLECTION
February 3 - August 4, 1985

LANDSCAPE DRAWINGS FROM THE COLLECTION
February 3 - June 2, 1985

LEONARDO DA VINCI DRAWINGS OF HORSES FROM THE ROYAL LIBRARY OF WINDSOR CASTLE
February 24 - June 9, 1985

ROBERT NANTEUIL: PORTRAIT ENGRAVER TO THE SUN KING
March 10 - April 28, 1985

ANCIENT ART OF THE AMERICAN WOODLAND INDIANS
March 17 - August 4, 1985

COLLECTION FOR A KING: OLD MASTER PAINTINGS FROM THE DULWICH PICTURE GALLERY
April 14 - September 2, 1985

THE SCULPTURE OF INDIA: 3000 B.C. - 1300 A.D.
May 3 - September 2, 1985

STUBBS: AN EXHIBITION IN HONOR OF PAUL MELLON
May 4 - June 2, 1985

LEONARDO TO VAN GOGH: MASTER DRAWINGS FROM BUDAPEST
May 12 - July 14, 1985

NGA TWENTIETH CENTURY COLLECTION
May 1985 - April 1986

FIGURE DRAWINGS FROM THE COLLECTION
June 9 - October 19, 1985

SELECTIONS FROM THE INDEX OF AMERICAN DESIGN
June 25 - September 29, 1985

THE BAER FAMILY COLLECTION OF MASTER DRAWINGS
July 28 - October 6, 1985

FIGURE PRINTS FROM THE COLLECTION
August 18, 1985 - February 16, 1986

MODERN GERMAN PRINTS FROM THE JACOB AND RUTH KAINEN COLLECTION
September 22, 1985 - February 9, 1986

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EDUCATION DIVISION

This division, consisting of several interdependent departments, designs interpretive programs and materials for gallery visitors of all ages and, through the services of Extension Programs, for audiences throughout the Nation.

Department of Public Programs: This department comprises the old departments of Tours and Lectures and Art Information, as well as the Slide Library and the Department of Young People's Programs. The key functions of this unit are to provide a wide range of daily tours and Gallery talks for the general public and to assist the public with information about the Gallery's collection and other art-related concerns. In fiscal '85, several new talks and tours were added to the regular program. The daily offering of activities increased from 5 to 7 and now includes separate introductory tours of the Gallery's two buildings, introductory tours in French and in Spanish, two thematic tours and a short gallery talk on an individual object. Also in fiscal '85 new courses on the history of art offered free of charge to the general public were also added. In addition to the programs mentioned, the Gallery's lecturers also prepare tours on request for groups of adults and high school students. In recent years, the need for multi-visit programs for gifted and talented students and high school and college students has also increased. This has resulted in increased cooperation between the Education Department's teaching staff and educators in the area and nation-wide. One of the key goals of this department will be to develop teacher training programs which will enable educators to make better use both of the Gallery's collections and also of the materials available to them through the Department of Extension Programs.

Young People's Programs: This section prepares tours and develops materials and programs for children from kindergarten through high school. Volunteer docents trained by the professional staff give tours to school children. In addition to basic tours designed to introduce children to looking at art, the department works closely with school teachers to prepare materials and tours which relate to the classroom curriculum. In 1983, a new program entitled "Elements of Design" proved to be extremely popular. The program, which is on-going, includes pre-visit orientation in the classroom, a film showing a tour and a hands-on workshop. This department has also begun producing self-guided tours for young people to use in the galleries when visiting with their families.

Special Projects: This unit was created to deal with the unique challenges posed by special exhibitions. The public has become increasingly eager to use exhibitions as learning tools, and innovative methods are required to meet the demands of the large and sophisticated crowds of visitors who partake of the Gallery's varied exhibition program. Working closely with curators, the

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special projects staff produces labels, wall texts, brochures, teachers' preparation packages as well as audio-visual programs and recorded tours.

Slide Library: This collection of over 141,205 slides is being used increasingly by both the education department's staff for their new history of art courses and also by outside educators. As the department looks to increase its work with teachers, the department's resources will become more and more in demand. The staff will need to grow in order to keep up with the additional work.

Department of Audio-Visual Coordination: This department consists of two units, Auditorium Programs and Audio-Visual Services.

Auditorium Programs coordinates the activities in the Gallery's East Building Auditorium and West Building Lecture Hall and plans the film programs. The on-going series of regular Sunday Talks by guest scholars is one of the oldest and most respected of the Gallery's programs. All lectures are recorded and available to the public or to interested scholars on request. In addition, films about art and artists as well as special film series are drawing increasingly larger crowds. It is hoped that the program of public lectures may be expanded through the addition of lecture series and symposia for the general public. A series of three conversations with living artists, Robert Rauschenberg, Roy Lichtenstein and David Hockney, in the winter of 1985, proved to be extremely successful, and there is increasing demand to continue this kind of program.

Audio-Visual Services works closely with the Special Projects unit and also with other departments in the museum producing multi-image programs for exhibitions, documenting on video-tape installations, producing public service announcements and offering technical and creative expertise on audio-visual matters.

Statistical Summary of Interpretive Programs for Fiscal 85:

Direct Programs to the Public	No. of Events	Audience
Tours announced in the Calendar of Events (Collection Highlight, Special Tours of the Week, General Tours)	1,617	47,806
Special Appointment Tours	1,253	36,984
Tours for School Children	2,535	31,453
Special Programs	70	14,600
Sunday Lectures	51	18,500
Sub-total	5,526	149,343

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Indirect Programs

Films	554	85,624
Recorded Tours Available	14	29,147
Radio Programs Produced	38	1,552,000
Sub-total	606	1,666,771
GRAND TOTAL	6,132	1,816,114

Department of Extension Programs:

This important department, also within the Education division, develops, produces, and circulates color slide programs, films, and videotapes based upon the Gallery's collections and exhibitions to nationwide audiences. Extension Programs are used in schools, libraries, other civic organizations, and by public and educational television stations and networks throughout the country. All Extension Programs are loaned free of charge, with return postage representing the only cost to the borrower.

Extension Program audience reports indicate that in FY 1985, 125,569,311 persons viewed Extension programs, a fivefold increase over the audience level of just five years ago. Sustaining this scope of service is contingent upon maintaining adequate flow of programmatic resources to these borrowers, particularly for television presentation. Gallery films are heavily utilized, and meeting needs for circulating copies and for new material for broadcast points up the importance of adequate support for both program development and distribution activities. Sustaining the audience level in FY 1985 at more than one hundred million persons was partially due to special promotion of existing program material to a larger number of educational and public television facilities, and, in the course of the year, over one hundred seventeen million viewers in communities in every state in the nation saw the Gallery's Extension Programs on public and educational television.

Of the overall audience, more than four million persons throughout the nation used Extension Programs through both regular direct (short-term) loans and through the Extended, or "Affiliate," Loan System. This demonstrates better and higher utilization of programs in schools, as well as enhanced levels of use in other, "informal" educational settings. Based on borrower usage reports, the total of program presentations rose to 70,929, the highest level in the department's history and a 45% increase over that of FY 1984. A portion of this rise can be attributed to the addition of almost one hundred new agencies--educational resource centers, public libraries, school systems, college or university instructional media and television facilities, and

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public museums--to the Extended (Affiliate) Loan Program during the year. These agencies act as "satellite" distributors of Extension Programs, providing immediate accessibility to borrowers in each of their particular regions. Another aspect of the increase in program utilization can be related video-cassette distribution. In response to borrower demand, during FY 1985 the department began offering videocassette titles in one-half inch Beta and VHS sizes, along with the three-quarter inch size previously available. Providing program material in these popular formats has resulted in a 100% rise in videocassette use.

The department continues to foster active circulation of programs to U.S. embassies abroad through U.S.I.A. and to military installations within the United States, in Europe, and in Asia, and to the Atlantic and Pacific fleets. Gallery films such as Picasso and the Circus, David Smith, Calder: Mobile, and Picasso: the Saltimbanques were chosen to represent the United States in international film festivals in such varied places as Spain, India, and Belgium. Important Information Inside: John F. Peto and the Idea of Still-Life Painting, a film produced by the department in FY 1984, was selected for worldwide satellite transmission via U.S.I.A's WORLDNET. This film was awarded a CINE Golden Eagle during the year also.

During FY 1985 program development activity centered upon research, writing, development, and production of a film entitled John James Audubon: The Birds of America. Produced in relation to an exhibition of plates from the Gallery's original unbound edition of the "double elephant folio", one of only two in existence, the film shows a range of hand-colored engravings from the Gallery's folio and also includes footage of Audubon's original watercolor drawings for The Birds of America. Structured as a biography of the artist, the film traces the development of his style and gives a sense of Audubon's determination to record and draw the birds of the American wilderness and, too, his struggle to publish The Birds of America. The program is available as a film, for direct circulation; video forms are being provided for educational and public television. Another film, Raphael and the American Collector, originally presented in conjunction with the exhibition of the same title, was expanded to include an introductory sequence surveying Raphael's art; it has been completed and added to Extension Programs' offerings in both film and videocassette forms. In the course of FY 1984, the department completed a new color slide program based on the Gallery exhibition of Degas: The Dancers. Ancient Art of the America Woodland Indians is the basis for another program currently being developed. Both programs contain images which illuminate the central ideas of the exhibitions, narrative commentary by the guest curators, and illustrated text brochures. To reflect the addition of numerous programs and new program types to the department's offerings during the past few

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years, a new Extension Programs catalogue was written, redesigned, and has been published.

Summary Statistics

In FY 1985, Extension Programs were shown 70,929 times to a total audience reported at 125,569,311 persons throughout the nation and in sixty foreign countries.

A summary of Extension Programs' use for fiscal 1985 is shown in the following table:

Summary of Extension Programs' Audience and Showings by Month

FY 1985 October 1984 - September 1985

		Showings	Audiences
October	1984	5,997	7,331,692
November	1984	6,612	4,543,998
December	1984	6,776	4,276,215
January	1985	6,242	4,669,778
February	1985	7,443	6,930,408
March	1985	7,543	10,391,628
April	1985	6,995	14,907,494
May	1985	5,878	13,100,423
June	1985	2,654	15,781,307
July	1985	1,796	7,469,740
August	1985	3,063	9,120,306
September	1985	9,930	27,045,912
TOTAL FY 1985		70,929	125,569,311

Average Monthly Use of Extension Programs by Program Type

	Showings	Audiences
Color slide programs	1,755	79,784
Films	2,286	117,132
Videocassettes	126	13,761
Extended Loans	1,292	156,566
Public/Educ. Television	452	10,096,867
MONTHLY AVERAGE	5,911	10,464,110

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LIBRARY

Library Acquisitions and Services: For fiscal year 1985, additions to the collection consisted of 3,950 titles in 5,899 volumes, 13 titles in microformat (microfilm or microfiche), 11,974 pieces of vertical file material and 1,682 pieces of unprocessed ephemera. The additions to the Library's holdings bring the size of the collection of catalogued and uncatalogued books, pamphlets, bound volumes of periodicals, microforms, auction sale catalogs, and dealer catalogs, to 310,207 volumes. The Library has served 1,718 visitors, responded to 7,663 reference inquiries, and conducted 165 tours of the library spaces. NGA staff and CASVA fellows have received 1,736 books supplied through interlibrary loan service.

Photographic Archives: In FY 1985, 32,289 photographs and 140,629 microform images were acquired for the photographic archives. (The collection now contains 1,114,000 photographs and 2,775,000 images on fiche.)

Photographic Laboratory: The FY'85 projected production output for the Photographic Laboratory, DPL, is as follows:

Black and white negatives	6,435
Black and white prints	40,909
Black and white and color slides	16,419
Color transparencies	1,907
Color negatives	1,032

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CURATORIAL AND CONSERVATION DIVISIONS

Conservation

The mandate of the Conservation Division, as has been described in previous budget submissions, is the examination and treatment of the collection and monitoring of the condition of works in the collection and objects on loan to the Gallery. In addition to conducting conservation treatments, the staff reviews the condition of all the works on exhibition and carries out technical studies in support of care for the collection and research on related subjects.

The physical renovation of the conservation laboratories in the late 1970's and early 1980's established the basis for growth. Both equipment and staff development were high priorities during the period following the initial lab renovations. This development was first initiated in 1975 when the National Gallery identified the need for 35 positions in the Conservation Division.

Before commencement of the personnel expansion plan, the division had maintained a staff level of only 5 people in 1975. The division grew to include 12 people as the new laboratories were remodeled. From the period of 1981 to 1982, four additional staff members were added to the division. Two of these positions were established utilizing private funds. With seven key positions allocated by Congress for FY 1984, the division has experienced a substantial growth in all of its laboratories.

Private initiative has produced an endowed chair for the Chief of Conservation and funds granted through the private sector established several conservation programs. These include the Advanced Training Fellowships, Staff Research Program, Senior Scientist Fellowship and the Technical Publications Program. These programs have enhanced the work of the division and the care of the collection.

In 1985, positions unfilled through past allocations included a Microscopist, and an Organic Scientist. Negotiations are still underway to identify a suitable candidate for the Head of the Objects Department. Through the support of the Andrew W. Mellon Foundation, a Senior Scientist Fellow will be chosen for a six month to one year period for work at the Gallery. The 1986 personnel request provides details of the need for attaining the goals identified in the original staffing plans. Given the critical need for care of the collection, greater activity in the systematic cataloguing of the collection, and an expanded exhibition and loan program, the need for further staff enhancement through a search for a senior objects conservator, conservation scientist, associate scientist, paintings conservator, a conservator for loans, further clerical support,

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technicians, matter/framers, and a frame conservator is vital to our preservation efforts. Although the expansion plans were scheduled to end in 1986, the lack of approval of additional positions originally in 1985 has extended the plan into 1987. This will mark the culminating phase of major staff development through the search for support staff in various departments in the division.

The slow but steady growth of the division may be attributed to the difficulty in recruiting suitably qualified personnel. The path to hiring many of the present senior conservation personnel consumed a vast amount of time in terms of the initial identification of viable candidates, interviews, negotiations, and adequate lead time for starting dates. Since the initial hiring phase sought to fill senior positions, extreme care was taken to seek candidates of recognized expertise. The orderly expansion has allowed the department heads to build responsible, competent departments for the preservation of the collections. Although initial hiring efforts had been hindered by difficulty in convincing exceptionally good conservators to move from established positions, progress has been made in attracting key people. Considering the distinguished quality of the collections of the National Gallery, equally distinguished conservators and conservation scientists have been sought. The lack of competitive salaries has often prevented us from continuing negotiations. Our experience has shown that a number of potential senior staff members solicited will quickly decline job offers due to low salary levels.

One solution to the difficulty with inadequate salary, recruitment of senior staff, and methods of increasing the utilization of the new facilities has been the utilization of contract funds to attract conservators to work within the Conservation Division. This method has allowed departments to choose specialists to work for a finite period on a specific project. The benefits have included attraction of highly qualified experts, and treatment of difficult projects in the collection. The restricted funds available in this budget category have inhibited the program and therefore the treatment of the collection has been delayed longer than wise. Experts in various fields, such as biochemistry, for the study of organic materials in paintings, dendochronologists, for the examination and identification of wood, and specialists in furniture and large outdoor sculpture, all of whom we do not retain on staff, are valuable to the process of caring for the collection.

The growing major priority in conservation at the Gallery is the National Lending Service Collection. By necessity, this collection has repeatedly been bypassed in order to cover more pressing needs. Expanded funding for contract and permanent staffing would allow for the treatment of 351 paintings by George Catlin, the great artist of the American frontier. These fragile paintings on cardboard were approved for treatment in 1980 which

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has removed them from loan circulation. Regional museums have been deprived of long-term loans of these exceptional works due to the lack of funding for treatment. Another recent gift of 285 paintings by the acclaimed American modern artist, Mark Rothko, bears many of the same problems and claims an added need for funding. This collection of paintings arriving in 1987, due to their unique construction, will probably require their own specialized conservator.

Summary of Conservation Division Treatments
FY 1985 Annual Report Figures

During fiscal year 1985, the following number of works of art were treated and/or examined by the National Gallery's Conservation Division:

Paintings: 23 paintings received major treatment; 70 received minor treatment; 200 paintings were given major analysis and 260 were examined for condition;

Objects: 20 sculpture and decorative art objects were given major treatments; 130 received minor treatments; 40 were given major examinations; and 1,120 exhibition and loan objects were examined for condition;

Paper: 50 works of art on paper received major treatment and 200 received minor treatment; 60 examinations and proposals for treatment and 1,540 examinations for condition were completed;

Frames: 1,390 frames were assembled and 1,830 works were matted and prepared for exhibition by the matter/framers; 48 frames were given major treatments; 8 new frames were made; and 42 were handled for minor treatments;

Textiles: 3 major treatments and 200 minor treatments were conducted by the textile workshop.

In addition to the practical treatments and examinations of the collections, the Analytical Department conducted scientific investigations on the composition of 137 works of art from the National Gallery's collection. Approximately 1,350 analyses and tests were conducted on samples provided to the laboratory. The Science lab has continued its study of pigments, varnishes, resins and waxes.

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SUMMARY:

	All Treatments
Paintings	93
Objects	150
Paper	250
Frames	98
Textiles	203
Major examinations	500
Condition examinations	2,860
Total	4,154

MUSIC PROGRAM

Concerts: The Sunday evening concerts in the East Garden Court were continued throughout the fiscal year. These concerts are free to the public and October 7, 1984 marked the beginning of the forty-third year of these concerts, which continued through June 30, 1985. As a long-standing service to a wide audience in-house and over radio broadcast, we believe this program to be worthy of full Federal funding.

ATTENDANCE

Attendance and Maintenance: Total attendance for both buildings or fiscal year 1985 was 5,079,858 visitors.

This high level of attendance again provided a major challenge to the building operation and maintenance staff to insure that the Gallery continues to be maintained in the highest standards commensurate with the superb quality of its art collections.

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National Gallery of Art
Annual Visitor Attendance
Fiscal Year 1954 - 1987

Fiscal Year	Visitor Attendance
1954	783,000
1955	861,000
1956	1,043,000
1957	935,000
1958	922,000
1959	957,000
1960	989,000
1961	1,275,000
1962	1,200,000
1963	1,777,000
1964	1,269,000
1965	1,377,000
1966	1,583,000
1967	1,493,000
1968	1,165,000
1969	1,630,000
1970	1,825,000
1971	1,481,000
1972	1,357,000
1973	1,609,000
1974	1,398,000
1975	1,899,000
1976	2,181,000
1977	3,100,000
1978	4,600,000
1979	5,529,000
1980	5,997,000
1981	6,735,000
1982	6,036,000
1983	4,894,000
1984	4,859,000
1985	5,080,000
1986 (Est.)	5,500,000
1987 (Est.)	5,000,000

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1986 Appropriation and 1987 Request

1986 Appropriation

The National Gallery of Art's current year appropriation totals $36,831,000, and provides funding for 823 full-time permanent positions, with a full-time equivalent (FTE) employment ceiling of 791. The Gallery's fiscal year 1986 federal funds requirement reflects: the continuation of Phase IV of the Gallery's fifty-year construction program; and continuation of the Gallery's expanding art display and education programs. In addition, certain fixed costs increases have been included.

1987 Request

The appropriation requested for fiscal year 1987 totals $37,007,000 and provides for 823 full-time permanent positions with a full-time equivalent employment ceiling of 791. (An analysis of the budget increases/decreases is set forth on the following page.)

The Callery's fiscal year 1987 federal funds budget request reflects the following objectives:

1. To continue to meet the increasing demands on our expanded facilities by broadening the capabilities of the Gallery's existing programs of art exhibition, care and education;

2. To continue with Phase IV of the Gallery's fifty-year construction program--the repair, renovation and restoration of the original West Building which was opened to the public in 1941;

3. To continue with Phase II of the Gallery's electronic data processing plan -- the computerization of art inventory and art education systems and improvement of the management information systems.

The above objectives of the fiscal year 1987 budget request reflect increases as compared to the fiscal year 1986 budget as shown in the table on the following page.

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National Gallery of Art
Comparative Budget Requests
Fiscal Years 1986 & 1987

OBJECT CLASS	FY 1986	FY 1987	FY 1987 Over (Under) 1986
One Year Funds:			
Personnel Compensation	$18,743,000	$19,064,000	$ 321,000
Personnel Benefits	2,460,000	2,509,000	49,000
Subtotal Compensation & Benefits	21,203,000	21,573,000	370,000
Travel of Persons	90,000	121,000	31,000
Transportation of Things	70,000	71,000	1,000
Rents, Communications, Utilities	5,265,000	5,659,000	394,000
Printing & Reproduction	214,000	224,000	10,000
Other Services	2,154,000	2,237,000	83,000
Supplies & Materials	1,515,000	1,562,000	47,000
Equipment	840,000	740,000	(100,000)
Lands & Structures	-	-	-
Subtotal--One Year Funds	31,351,000	32,187,000	836,000
No Year Funds:			
Special Exhibitions:			
Travel	120,000	100,000	(20,000)
Transportation	700,000	830,000	130,000
Services	880,000	960,000	80,000
Supplies & Materials	500,000	530,000	30,000
Subtotal--Special Exh.	2,200,000	2,420,000	220,000
Repair and Renovation	3,280,000	2,400,000	(880,000)
Subtotal--No Year Funds	5,480,000	4,820,000	(660,000)
TOTAL FEDERAL FUNDS	$36,831,000	$37,007,000	$ 176,000
Budget after Sequestering	$35,247,000		

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Personnel Compensation and Benefits--Increase of $370,000. This increase will be applied as follows:

Item	Amount
Mandatory within-grade promotions and wage-board step increases ($125,000 for FY 87 and $138,000 for FY 86)	$ 263,000
Restore reduction of base pay in FY 1986 budget for Function C Protection	41,000
Elimination of funding for 12 temporary FTE employment workyears and overtime for Treasure Houses of Britain Exhibition	(250,000)
Increase of 7 FTE employment workyears for full-time permanent positions	186,000
Annualize pay cost of 5 new conservation positions	63,000
Recalculate pay for 2080 hours	67,000
Totals	$ 370,000

Travel of Persons--Increase of $11,000. A total increase of $11,000 is requested for fiscal 1987. $31,000 is for overall general purpose travel such as for training, scholarly conferences, conservation study, systematic catalogue research, and verifying and escorting possible acquisitions. $20,000 reflects a decrease in Special Exhibitions Travel.

Transportation of Things--Increase of $131,000. A total increase of $131,000 is requested for fiscal 1987. $1,000 is for the increased costs of transporting materials, supplies, and equipment. The remaining $130,000 is for Special Exhibitions Transporation.

Rents, Communications and Utilities--Increase of $394,000. This increase is detailed as follows:

Description	FY 1986	FY 1987	Increase
Utilities--steam and electricity	$4,444,000	$4,746,000	$302,000
Communications--telephone and postage	522,000	636,000	114,000
Rent--structural	62,000	67,000	5,000
Rents--terminals, word processors, copiers, etc.	237,000	210,000	(27,000)
Totals	$5,265,000	$5,659,000	$394,000

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It is estimated that $302,000 more is required to cover the costs of steam and electricity for all structures. This reflects an overall estimated increase of 6.8% for both rates charged and/or quantities used. (Please refer to summaries of steam and electricity usage on pages 5-5 and 5-6.) A decrease of $27,000 results from the ownership of several word processors under our lease/purchase plan. An increase of $92,000 is needed for telephone and telegraph as a result of usage and/or rate increases, such as increased cost due to divestiture. The primary component increase is $83,000 for increased costs of FTS Intercity Telephone Service per GSA planning. A $22,000 increase is needed in postage due to increases in costs and usage of first class mail. Finally, structural rental rates are estimated to increase by $5,000.

Printing and Reproduction--Increase of $10,000. This increase will be applied toward a realized substantial increase in the cost of printing extension service catalogs; increased costs and larger quantities of information booklets, calendar of events, gallery leaflets and other publications of the Gallery due to greater use of this information by the public.

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Other Services--Increase of $163,000. A summary of this increase follows:

Description	FY 1986	FY 1987	FY 1987 Increase Over FY 1986
Special Exhibitions.....	$ 880,000	$ 960,000	$ 80,000
Art Restoration.....	200,000	220,000	20,000
Extension Services.....	130,000	130,000	-
Data Processing.....	495,000	681,000	186,000
Cataloging Services.....	56,000	56,000	-
Photo Processing.....	8,000	8,000	-
Personal Property Repair (Equipment).....	26,000	26,000	-
All Other.....	69,000	69,000	-
Subtotal Art Care.....	1,864,000	2,150,000	286,000
Personal Property Repair, Alterations, and Maintenance.....	23,000	23,000	-
Real Property Repair, Alterations, and Maintenance.....	250,000	250,000	-
All Other.....	40,000	40,000	-
Subtotal Operations and Maintenance.....	313,000	313,000	-
Subtotal Protection....	46,000	46,000	-
Payroll Processing.....	116,000	122,000	6,000
Data Processing.....	559,000	430,000	(129,000)
Employee Training.....	50,000	50,000	-
Other Services General Admin.....	86,000	86,000	-
Subtotal General Admin.	811,000	688,000	(123,000)
TOTAL SERVICES	$3,034,000	$3,197,000	$ 163,000

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Supplies and Materials--Increase of $77,000. This increase is summarized as follows:

Description	FY 1986	FY 1987	FY 1987 Increase Over FY 1986
Special Exhibitions.....	$ 500,000	$ 530,000	$ 30,000
Office.....	52,000	52,000	-
Conservation.....	63,500	63,500	-
Library.....	15,000	15,000	-
Photo Archives.....	25,000	25,000	-
Photo Lab.....	55,000	55,000	-
Extension Service	96,000	96,000	-
Newspapers, periodicals, pamphlets & documents.	109,000	109,000	-
Audio Visual.....	28,000	28,000	-
Other supplies.....	105,500	117,500	12,000
Subtotal Art Care	1,049,000	1,091,000	42,000
Building Operating.....	250,000	260,000	10,000
Grounds Maintenance.....	46,000	46,000	-
Repair of Buildings and Fixed equipment.....	425,000	445,000	20,000
All Others.....	32,000	32,000	-
Subtotal Operations and Maintenance.....	753,000	783,000	30,000
Subtotal Protection	94,000	99,000	5,000
Data Processing.....	10,000	10,000	-
Office Supplies.....	60,000	60,000	-
General Admin. Supplies.	49,000	49,000	-
Subtotal General Admin.	119,000	119,000	-
TOTAL SUPPLIES AND MATERIALS.....	$2,015,000	$2,092,000	$ 77,000

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Equipment--Decrease of ($100,000). Capital equipment for basic operations reflects a decrease of $100,000.

Repair and Renovation--Decrease of ($880,000). A total of $2,400,000 is requested in FY 1987 for the Repair, Restoration and Renovation of Buildings program as compared to $3,280,000 in FY 1986. Please refer to Tab 5A for a full discussion of this program.

Special Exhibitions--Increase of $220,000. Total federal funds requested in fiscal year 1987 in support of special exhibitions held at the Gallery amount to $2,420,000--an increase of $220,000 above the fiscal year 1986 budget of $2,200,000. This is summarized as follows:

Description	FY 1986	FY 1987	1987 Over (Under) 1986
Travel	$ 120,000	$ 100,000	$ (20,000)
Transportation	700,000	830,000	130,000
Services	880,000	960,000	80,000
Supplied & Materials	500,000	530,000	30,000
Total	$2,200,000	$2,420,000	$ 220,000

This represents an increase of $220,000 for inflation to make up for the erosion of purchasing power over the last several years. Please refer to Tab 4A - Special Exhibitions section for the analysis of estimated costs and funding sources of special exhibitions scheduled for fiscal year 1987.

A summary of the Gallery's budget increases by function is set forth on the following page.

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NATIONAL GALLERY OF ART
FEDERAL BUDGET HIGHLIGHTS
FISCAL 1987

					DISTRIBUTION OF 1987 INCREASES BY FUNCTION			
	Page No.	1-19			6-3	5-2	6-1	7-2
	OBJECT CLASS	FY 1986	FY 1987	TOTAL INCREASES FY 1987 OVER/(UNDER) FY 1986	FUNCTION A CARE & UTILIZATION OF ART	FUNCTION B OPERATIONS & MAINTENANCE	FUNCTION C PROTECTION	FUNCTION D GENERAL ADMINISTRATION
1100	PERSONNEL COMPENSATION	$19,743,000	$19,864,000	$ 321,000	$ 284,000	$ 126,000	$(124,000)	$ 35,000
1200	PERSONNEL BENEFITS	2,460,000	2,509,000	49,000	38,000	15,000	(2,000)	(2,000)
	SUBTOTAL COMPENSATION & BENEFITS	21,203,000	21,573,000	370,000	322,000	141,000	(126,000)	33,000
2100	TRAVEL OF PERSONS	210,000	221,000	11,000	11,000	-	-	-
2200	TRANSPORTATION OF THINGS	770,000	901,000	131,000	130,000	1,000	-	-
2300	RENTS, COMMUNICATIONS & UTILITIES	5,265,000	5,659,000	394,000	(31,000)	302,000	-	123,000
2400	PRINTING & REPRODUCTION	214,000	224,000	10,000	10,000	-	-	-
2500	OTHER SERVICES	3,034,000	3,197,000	163,000	286,000	-	-	(123,000)
2600	SUPPLIES & MATERIALS	2,015,000	2,092,000	77,000	42,000	30,000	5,000	-
3100	EQUIPMENT	840,000	740,000	(100,000)	(100,000)	-	-	-
3200	LANDS & STRUCTURES	-	-	-	-	-	-	-
	SALARIES & EXPENSES	33,551,000	34,607,000	1,056,000	670,000	474,000	(121,000)	33,000
	REPAIR, RESTORATION & RENOVATION	3,280,000	2,400,000	(880,000)	-	(880,000)	-	-
	TOTAL NGA	$36,831,000	$37,007,000	$ 176,000	$ 670,000	$(406,000)	$(121,000)	$ 33,000

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NATIONAL GALLERY OF ART
FISCAL YEAR 1987 BUDGET
SUMMARY OF INCREASES AND DECREASES
(by Function)
(In Thousands of Dollars)

	Description	Function (A) Art Care	Function (B) OPS Maint.	Function ($) Renovation	Function (C) Security	Function (D) Gen. Adm.	NGA Totals
1986	Appropriation	$11,538	$11,021	$3,280	$6,830	$4,162	$36,831
	Adjustments to Base	(35)	(44)	-	(71)	150	-
1986	Revised Estimates	$11,503	$10,977	$3,280	$6,759	$4,312	$36,831
1.	Sequestered Amount	(496)	(474)	(141)	(294)	(179)	(1,584)
1986	Budget after Sequestering	11,007	10,503	3,139	6,465	4,133	35,247
2.	Within grade promotions and wageboard step increases	90	85	-	63	25	263
3.	Eliminate 12 FTE for Treasure Houses of Britain	-	-	-	(250)	-	(250)
4.	7 FTE Employment	147	39	-	-	-	186
5.	Annualize cost of 5 new conservation positions	63	-	-	-	-	63
6.	Recalculate pay for 2,080 Hours	22	17	-	20	8	67
7.	Restore FY 1986 base pay reduction for security	-	-	-	41	-	41
8.	Increased cost of rents, communications and utilities	(31)	302	-	-	123	394
9.	Travel overall general purpose	31	-	-	-	-	31
10.	Transportation	-	1	-	-	-	1
11.	Conservation - Art Restoration	20	-	-	-	-	20
12.	Special Exhibitions	220	-	-	-	-	220
13.	EDP Services	102	-	-	-	(129)	(27)
14.	Integrated Library System EDP	84	-	-	-	-	84
15.	Guard Uniforms	-	-	-	5	-	5
16.	Building Operating Supplies	-	30	-	-	-	30
17.	National Loaning Service Crates	12	-	-	-	-	12
18.	Printing and Binding	10	-	-	-	-	10
19.	TFIS Payroll Processing	-	-	-	-	6	6
20.	Equipment Reduction	(100)	-	-	-	-	(100)
21.	Renovation Program	-	-	(800)	-	-	(800)
22.	Restore Sequestered Amount	496	474	141	294	179	1,584
1987	Budget Estimate	$12,173	$11,451	$2,480	$6,638	$4,365	$37,007
Net Increase/(Decrease) (1987 estimates over 1986 revised estimates)		$ 670	$ 474	$ (800)	$ (121)	$ 53	$ 176

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National Gallery of Art
Uncontrollable and Program Increases/(Decreases)
Fiscal Year 1987

Description	Ucontrollable Increase/(Decrease)
Within grade promotions and wageboard step increases..	$ 263,000
Restore reduction in base pay in FY 1986 for security guards.....	41,000
Annualize pay costs of 5 new conservation positions...	63,000
Recalculate pay for 2080 hours.....	67,000
Subtotal Payroll Costs	$ 434,000
Increased cost of rents, communications and utilities.....	394,000
Increased cost of transporting materials, supplies and equipment.....	1,000
Increased cost of payroll processing supplied by the U.S. Treasury (TUMS).....	8,000
Increased cost of guard uniforms.....	5,000
Supplies for repairs and maintenance of buildings and fixed equipment.....	30,000
Increased cost of Printing and Binding.....	$ 10,000
Total Uncontrollable Increase	$ 880,000

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	Program Increase/(Decrease)
Eliminate funding for 12 temporary FTE and overtime for Treasure Houses of Britain Exhibition.....	$ (250,000)
Increase of 7 FTE employment workyears for full-time permanent positions.....	186,000
Travel - Art care/conservation/curatorial.....	31,000
Conservation services - Art restoration.....	20,000
EDP Services and Supplies (On-site)	
Art care function.....	102,000
Administration and fiscal.....	(129,000)
Library	
EDP - Integrated Library System.....	84,000
National Landing Service crates.....	12,000
Equipment.....	(100,000)
Subtotal - One-year Program Funds	$ (44,000)
Special Exhibitions Travel, Transportation, services and supplies.....	220,000
Renovation Program.....	(880,000)
Subtotal - No-year Program Funds	(660,000)
Total Program Decreases.....	$ (704,000)
TOTAL NCA FY 86 INCREASES	$ 176,000

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Appropriation Language

SALARIES AND EXPENSES, NATIONAL GALLERY OF ART

For the upkeep and operations of the National Gallery of Art, the protection and care of the works of art therein, and administrative expenses incident thereto as authorized by the Act of March 24, 1937 (50 Stat. 51), as amended by the public resolution of April 13, 1939 (Public Resolution 9, Seventy-sixth Congress), including services as authorized by 5 U.S.C. 3109; payment in advance when authorized by the treasurer of the Gallery for membership in library, museum, and art associations or societies whose publications or services are available to members only, or to members at a price lower than to the general public; purchase, repair, and cleaning of uniforms for guards, and uniforms, or allowances therefor, for other employees as authorized by law (5 U.S.C. 5901-5902); purchase, or rental of devices and services for protecting buildings and contents thereof, and maintenance, alteration, improvement, and repair of buildings, approaches, and grounds; and purchase of services for restoration and repair of works of art for the National Gallery of Art by contracts made, without advertising, with individuals, firms, or organizations at such rates or prices and under such terms and conditions as the Gallery may deem proper, [$33,754,000] $34,607,000 of which not to exceed [$2,200,000] $2,420,000 for the special exhibition program shall remain available until expended.

(Department of the Interior and Related Agencies Appropriation Act, 1986, as included in Public Law 99-190.)

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Appropriation Language

REPAIR, RESTORATION AND RENOVATION OF BUILDINGS

For necessary expenses of repair, restoration and renovation of buildings, owned or occupied by the National Gallery of Art, by contract or otherwise, as authorized, [$3,300,000] $2,400,000 to remain available until expended: Provided, that contracts awarded for environmental systems, protection systems, and exterior repair or renovation of buildings of the National Gallery of Art may be negotiated with selected contractors and awarded on the basis of contractor qualifications as well as price.

(Department of the Interior and Related Agencies Appropriation Act, 1986, as included in Public Law 99-190.)

Provided further, That unexpended balances of amounts previously appropriated for this purpose under the heading "Salaries and expenses, National Gallery of Art" may be transferred to and merged with this appropriation and accounted for as one appropriation for the same time period as originally enacted.

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Authorizing Legislation

This request for an appropriation is based on the premises contained in section 4(a) of the Joint Resolution of Congress, March 24, 1937, (20 U.S.C. 71-75) in which:

> "The faith of the United States is pledged that...the United States will provide such funds as may be necessary for the upkeep of the National Gallery of Art and the administrative expenses and costs of operation thereof, including the protection and care of works of art acquired by the Board, so that the National Gallery of Art shall be at all times properly maintained and the works of art contained therein shall be exhibited regularly to the general public free of charge. For these purposes there are hereby authorized to be appropriated such sums as may be necessary."

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NATIONAL GALLERY OF ART

Summary of Federal Budget by Function
For the Ten Fiscal Years 1982 through 1991 Inclusive

Function	1982 (actual)	1983 (actual)	1984 (actual)	1985 (actual)	1986 (estimate)	1987 (estimate)	1988* (estimate)	1989* (estimate)	1990* (estimate)	1991* (estimate)
A. Care and utilization of art collections.....	$ 8,728	$ 9,218	$ 9,743	$12,427	$11,903	$12,173	$12,293	$12,473	$12,644	$12,817
B. Operation and maintenance of buildings and grounds.....	12,626	14,376	16,145	12,592	10,977	11,431	11,632	11,808	11,975	12,144
Repair, restoration and renovation of buildings	-	-	-	-	3,286	2,400	400	400	400	400
C. Protection of buildings, grounds, and contents...	4,736	5,436	5,843	5,581	6,759	6,630	6,815	6,914	7,009	7,105
D. General Administration..	2,620	3,314	3,794	3,216	4,312	4,365	4,413	4,478	4,539	4,601
BUDGET AUTHORITY TOTALS	$28,730	$32,384	$35,525	$33,816	$36,831	$37,007	$35,553*	$36,073*	$36,567*	$37,067*
TOTAL NOA OUTLAYS	$26,116	$30,690	$35,727	$35,763	$38,336	$38,448	$36,548*	$36,073*	$36,567*	$37,067*

Function	1982 (actual) No. of Pos.	1982 (actual) End of Yr.	1983 (actual) No. of Pos.	1983 (actual) End of Yr.	1984 (actual) No. of Pos.	1984 (actual) End of Yr.	1985 (actual) No. of Pos.	1985 (actual) End of Yr.	1986 (estimate) No. of Pos.	1986 (estimate) End of Yr.	1987 (estimate) No. of Pos.	1987 (estimate) End of Yr.	1988 (estimate) No. of Pos.	1988 (estimate) End of Yr.	1989 (estimate) No. of Pos.	1989 (estimate) End of Yr.	1990 (estimate) No. of Pos.	1990 (estimate) End of Yr.	1991 (estimate) No. of Pos.	1991 (estimate) End of Yr.
A. Care and utilization of art collections.....	214	180	214	187	214	199	212	205	212	202	227	207	227	207	227	207	227	207	227	207
B. Operation and maintenance of buildings and grounds.....	213	181	213	185	213	182	213	179	213	180	198	182	198	182	198	182	198	182	198	182
C. Protection of buildings, grounds, and contents...	310	279	310	281	310	270	310	248	310	298	310	298	310	298	310	298	310	298	310	298
D. General Administration..	86	75	86	72	86	74	88	70	88	77	88	77	88	77	88	77	88	77	88	77
TOTALS	823	715	823	725	823	725	823	702	823	757	823	764	823	764	823	764	823	764	823	764

*These totals represent OMB's multi-year planning ceilings for budget authority and outlays ("OMB Passback")

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NATIONAL GALLERY OF ART

SUMMARY OF PERSONNEL REQUIREMENTS BY FUNCTION

FULL-TIME EQUIVALENT (FTE), TOTAL PERMANENT POSITIONS (PP), AND TOTAL PERMANENT WORK-YEARS (PWY)

FUNCTION	1982 FTE (Actual)			1983 FTE (Actual)			1984 FTE (Actual)			1985 FTE (Actual)			1986 FTE (Estimate)			1987 FTE (Estimate)			1988 FTE (Estimate)			1989 FTE (Estimate)			1990 FTE (Estimate)			1991 FTE (Estimate)		
	FTE	PP	PWY	FTE	PP	PWY	FTE	PP	PWY	FTE	PP	PWY	FTE	PP	PWY	FTE	PP	PWY	FTE	PP	PWY	FTE	PP	PWY	FTE	PP	PWY	FTE	PP	PWY
A. Care and Utilization of Art Collection (Tab 4).....	185	22	204	188	23	211	188	22	210	208	20	228	198	20	218	208	20	228	208	20	228	208	20	228	208	20	228	208	20	228
B. Operation and Maintenance of Buildings and Grounds (Tab 5).	175	2	177	171	7	178	175	6	181	170	7	177	180	1	181	182	1	183	182	1	183	182	1	183	182	1	183	182	1	183
C. Protection of Buildings, Grounds and Contents (Tab 6)..	251	14	265	264	23	287	262	38	300	257	15	272	291	32	324	292	20	312	292	20	312	297	20	312	292	20	312	292	20	312
D. General Administration (Tab 7).....	69	4	73	70	4	74	73	3	76	70	3	73	75	3	78	75	3	78	75	3	78	75	3	78	75	3	78	75	3	78
TOTALS.....	677	42	719	693	57	750	698	69	767	697	53	750	745	56	801	757	44	801	757	44	801	757	44	801	757	44	801	757	44	801

NOTE: The above figures represent full-time equivalent workyears during the year and, therefore differ somewhat from the actual number of positions filled at the end of the year.

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NATIONAL GALLERY OF ART
DETAIL OF CONVERSION FROM DECISION CENTERS TO FUNCTIONS
FISCAL YEAR 1985

DESCRIPTION	AMOUNT
I. Art Care - Function A	
Director - (1000)	$ 1,418,294
Deputy Director - (2000)	11,008,574
Total Art Care	12,426,868
II. Operations & Maintenance - Function B	
Operations & Maintenance - (3200)	
Total Operations & Maintenance	12,592,577
III. Protection - Function C	
Security - (3300)	
Total Protection	5,580,632
IV. General Administration - Function D	
Administrator - (3000)	20,220,692
Less: Operations & Maintenance - (3200)	(12,592,577)
	7,628,115
Less: Security - (3300)	(5,580,632))
	2,047,483
Add: Secretary & General Counsel - (4000)	203,866
	2,251,349
Add: Treasurer - (5000)	965,185
Total General Administration	$ 3,216,534

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NATIONAL GALLERY OF ART
1987 Fiscal Year Budget
Summary of Decision Centers and Functions
By Object Classification and Type of Employment

1985

Object Class	Description	FISCAL YEAR 1985 - FEDERAL FUNDS BUDGET								
		DECISION CENTERS					TOTALS	FUNCTIONS		
		Director (1000)	Deputy Director (2000)	Administrator (3000)	Secretary - Gen. Coun. (4000)	Treasurer (5000)	NGA BUDGET TOTALS	Art Care (A)	Oper. & Maint. (B)	Protection (C)	Gen. Admin. (D)
1100	Personnel Compensation	$ 894,228	$ 5,114,542	$10,593,561	$140,708	$ 344,127	$17,087,166	$ 6,008,770	$ 4,431,823	$4,854,980	$1,791,593
1200	Personnel Benefits	105,142	644,730	1,389,265	16,906	46,353	2,202,396	749,872	604,383	559,216	288,925
2100	Travel of Persons	2,959	76,350	9,627	512	-	89,448	79,309	5,953	48	4,138
2200	Transportation of Things	69	240,089	4,405	-	180	245,372	240,787	4,047	388	150
2300	Rents, Communications, Utilities	152,284	535,724	4,673,145	9,386	17,089	5,387,628	688,008	4,414,508	2,083	283.029
2400	Printing & Reproduction	21,143	178,555	14,049	-	9,395	223,142	199,698	-	-	23,444
2500	Other Services	96,515	2,370,462	645,201	2,613	485,246	3,600,037	2,466,977	565,771	27,711	539,578
2600	Supplies & Materials	47,145	1,243,637	1,055,647	23,575	44,618	2,414,622	1,290,782	805,614	117,475	200,751
3100	Equipment	98,180	604,485	112,566	10,166	18,177	843,574	702,665	37,252	18,731	84,926
3200	Lands & Structures	-	-	235,164	-	-	235,164	-	235,164	-	-
	Subtotal	1,418,294	11,008,574	18,732,630	203,866	965,185	32,328,549	12,426,868	11,104,515	5,580,632	3,216,534
3200	Renovation and Repair	-	-	1,488,062	-	-	1,488,062	-	1,488,062	-	-
	Total	$1,418,294	$11,008,574	$20,220,692	$203,866	$ 965,185	$33,816,611	$12,426,868	$12,592,577	$5,580,632	$3,216,534
	Full-time Equivalent Employment (FTE - Workyears)										
	FTP	27	173	480	4	13	697	200	170	257	70
	Other	5	23	25	-	-	53	28	7	15	3
	Total	32	196	505	4	13	750	228	177	272	73

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NATIONAL GALLERY OF ART
DETAIL OF CONVERSION FROM DECISION CENTERS TO FUNCTIONS
FISCAL YEAR 1986

DESCRIPTION	AMOUNT
I. Art Care - Function A	
Director - (1000)	$ 1,128,000
Deputy Director - (2000)	10,375,000
Total Art Care	11,503,000
II. Operations & Maintenance - Function B	
Operations & Maintenance - (3200)	
Total Operations & Maintenance	14,257,000
III. Protection - Function C	
Security - (3300)	
Total Protection	6,830,000
IV. General Administration - Function D	
Administrator - (3000)	23,799,000
Less: Operations & Maintenance - (3200)	(14,257,000)
	9,542,000
Less: Security - (3300)	(6,759,000)
	2,783,000
Add: Secretary & General Counsel - (4000)	290,000
	3,073,000
Add: Treasurer - (5000)	1,239,000
Total General Administration	$ 4,312,000

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NATIONAL GALLERY OF ART
1987 Fiscal Year Budget
Summary of Decision Centers and Functions
By Object Classification and Type of Employment

1986

FISCAL YEAR 1986 - FEDERAL FUNDS BUDGET

Object Class	Description	DECISION CENTERS: Director (1000)	Deputy Director (2000)	Administrator (3000)	Secretary - Gen. Coun. (4000)	Treasurer (5000)	TOTALS: NGA BUDGET TOTALS	FUNCTIONS: Art Care (A)	Oper. & Maint. (B)	Protection (C)	Gen. Admin. (D)
1100	Personnel Compensation	$ 779,000	$ 5,209,000	$12,052,000	$246,000	$ 457,000	$18,743,000	$ 5,988,000	$ 4,745,000	$5,858,000	$2,152,000
1200	Personnel Benefits	101,000	670,000	1,607,000	29,000	53,000	2,460,000	771,000	582,000	685,000	422,000
2100	Travel of Persons	16,000	183,000	11,000	-	-	210,000	199,000	-	-	11,000
2200	Transportation of Things	-	720,000	50,000	-	-	770,000	720,000	10,000	-	40,000
2300	Rents, Communications, Utilities	108,000	29,000	5,128,000	-	-	5,265,000	137,000	4,444,000	-	684,000
2400	Printing & Reproduction	33,000	181,000	-	-	-	214,000	214,000	-	-	-
2500	Other Services	50,000	1,814,000	465,000	-	705,000	3,034,000	1,864,000	313,000	46,000	811,000
2600	Supplies & Materials	31,000	1,018,000	931,000	14,000	21,000	2,015,000	1,049,000	753,000	94,000	119,000
3100	Equipment	10,000	551,000	275,000	1,000	3,000	840,000	561,000	130,000	76,000	73,000
3300	Lands & Structures	-	-	-	-	-	-	-	-	-	-
	Salaries & Expenses	1,128,000	10,375,000	20,519,000	290,000	1,239,000	33,551,000	11,503,000	10,977,000	6,759,000	4,312,000
	Repair, Restoration & Renovation	-	-	3,280,000	-	-	3,280,000	-	3,280,000	-	-
	Total NGA	$1,128,000	$10,375,000	$23,799,000	$290,000	$1,239,000	$36,831,000	$11,503,000	$14,257,000	$6,759,000	$4,312,000
	Full-time Equivalent Employment (FTE - Workyears)										
	FTP	25	173	524	6	17	745	198	180	292	75
	Other	5	15	36	-	-	56	20	1	32	3
	Total	30	188	560	6	17	801	218	181	324	78

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NATIONAL GALLERY OF ART
DETAIL OF CONVERSION FROM DECISION CENTERS TO FUNCTIONS
FISCAL YEAR 1987

DESCRIPTION	AMOUNT
I. Art Care - Function A	
Director - (1000)	$ 1,299,000
Deputy Director - (2000)	10,874,000
Total Art Care	12,173,000
II. Operations & Maintenance - Function B	
Operations & Maintenance - (3200)	
Total Operations & Maintenance	13,851,000
III. Protection - Function C	
Security - (3300)	
Total Protection	6,709,000
IV. General Administration - Function D	
Administrator - (3000)	23,420,000
Less: Operations & Maintenance - (3200)	(13,851,000)
	9,569,000
Less: Security - (3300)	(6,638,000)
	2,931,000
Add: Secretary & General Counsel - (4000)	293,000
	3,224,000
Add: Treasurer - (5000)	1,121,000
Total General Administration	$ 4,345,000

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NATIONAL GALLERY OF ART
1987 Fiscal Year Budget
Summary of Decision Centers and Functions
By Object Classification and Type of Employment

1987

Object Class	Description	DECISION CENTERS: Director (1000)	Deputy Director (2000)	Administrator (3000)	Secretary - Gen. Coun. (4000)	Treasurer (5000)	TOTALS: NGA BUDGET TOTALS	FUNCTIONS: Art Care (A)	Oper. & Maint. (B)	Protection (C)	Gen. Admin. (D)
	FISCAL YEAR 1987 - FEDERAL FUNDS BUDGET										
1100	Personnel Compensation	$ 933,000	$ 3,339,000	$12,081,000	$249,000	$ 462,000	$19,064,000	$ 6,272,000	$ 4,871,000	$3,734,000	$2,187,000
1200	Personnel Benefits	120,000	689,000	1,618,000	29,000	53,000	2,509,000	809,000	597,000	683,000	420,000
2100	Travel of Persons	27,000	183,000	11,000	-	-	221,000	210,000	-	-	11,000
2200	Transportation of Things	-	850,000	51,000	-	-	901,000	850,000	11,000	-	40,000
2300	Rents, Communications, Utilities	95,000	11,000	5,553,000	-	-	5,659,000	106,000	4,746,000	-	807,000
2400	Printing & Reproduction	33,000	191,000	-	-	-	224,000	224,000	-	-	-
2500	Other Services	50,000	2,100,000	485,000	-	582,000	3,197,000	2,150,000	313,000	46,000	688,000
2600	Supplies & Materials	31,000	1,060,000	966,000	14,000	21,000	2,092,000	1,091,000	783,000	99,000	119,000
3100	Equipment	10,000	451,000	273,000	1,000	3,000	740,000	461,000	130,000	76,000	73,000
3200	Lands & Structures	-	-	-	-	-	-	-	-	-	-
	Salaries & Expenses	1,299,000	10,874,000	21,020,000	293,000	1,121,000	34,607,000	12,173,000	11,451,000	6,638,000	4,345,000
	Repair, Restoration & Renovation	-	-	2,400,000	-	-	2,400,000	-	2,400,000	-	-
	Total NGA	$1,299,000	$10,874,000	$23,420,000	$293,000	$1,121,000	$37,007,000	$12,173,000	$13,851,000	$6,638,000	$4,345,000
	Full-time Equivalent Employment (FTE - Workyears)										
	FTP	29	179	526	6	17	757	208	182	292	75
	Other	5	15	24	-	-	44	20	1	20	3
	Total	34	194	550	6	17	801	228	183	312	78

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NATIONAL GALLERY OF ART
SUMMARY OF FULL-TIME PERMANENT POSITIONS
BY FUNCTION AND DECISION CENTER
FOR THE FISCAL YEARS 1985 TO 1987

Code		Function - Decision Center	FY 1985	FY 1986	FY 1987	FY 1987 Increase (Decrease) Over FY 1986
		Function A - Art Care				
1100		Office of Director	5	5	5	0
6111		External Affairs Office	0	0	0	0
6211		Information Office	5	5	5	0
6311		Corporate Relations	0	0	2	2
6411		Special Events	4	5	5	0
6511		Development Office	0	0	1	1
6611		Music	2	2	2	0
7111		Support Services for CASVA	5	5	5	0
		1000-Director	21	22	25	3
2100		Office of Deputy Director	3	3	3	0
2200		Curatorial	30	30	30	0
2300		Conservation	18	23	23	0
	2411	Editor's Office	6	6	6	0
	2420	Photo Lab and Services	11	11	11	0
2400		Editor's Department	17	17	17	0
	2511	Office of Curator of Education	2	2	2	0
	2521	Public Programs	23	23	23	0
	2530	Extension Programs	13	13	12	(1)
	2541	Audiovisual Coordiation	5	5	5	0
	2551	Slide Library	2	2	3	1
2500		Educational Programs	45	45	45	0
	2611	Office of Chief Librarian	2	2	2	0
	2621	Library	25	25	21	(4)
	2631	Photographic Archives	9	9	9	0
2600		Program Support Facilities	36	36	32	(4)
2700		Exhibit Programs & Schedule	5	3	3	0
2800		Records and Loans	16	13	13	0
	2911	Installation and Design	16	16	16	0
	2921	Planning Office	2	2	3	1
	2922	Construction Manager	3	2	2	0
2900		Design, Installation & Planning	21	20	21	1
		2000--Deputy Director	191	190	187	(3)
		Total Function A	212	212	212	0

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NATIONAL GALLERY OF ART
SUMMARY OF FULL-TIME PERMANENT POSITIONS
BY FUNCTION AND DECISION CENTER
FOR THE FISCAL YEARS 1985 TO 1987

Code		Function - Decision Center	FY 1985	FY 1986	FY 1987	FY 1987 Increase (Decrease) Over FY 1986
		Function B - Operation & Maintenance				
3210		Building Superintendent's Office	5	5	5	0
3220		Operating Engineers	50	50	50	0
3230		Electrical Shop	23	23	23	0
3240		Carpentry Shop	11	11	11	0
3250		Masonry Shop	11	11	11	0
3260		Sheet Metal & Plumbing	8	8	8	0
3270		Paint Shop	9	9	9	0
3280		Horticultural & Grounds Maint.	16	16	16	0
	3291	Day Laborers	29	29	29	0
	3292	Night Laborers	51	51	51	0
3290		Laborers	80	80	80	0
		3200--Total Function B	213	213	213	0
		Function C - Protection				
		3300--Total Function C	310	310	310	0
		Function D - General Administration				
3100		Office of Administrator	7	7	7	0
	3410	Procurement Office	4	4	4	0
	3420	Supply Office	11	11	11	0
3400		Procurement & Supply	15	15	15	0
	3510	Personnel Office	13	13	13	0
	3520	Checkroom Services	14	14	14	0
	3530	Mail, File, Record & Duplicating	8	8	8	0
	3540	First Aid	2	2	2	0
	3550	Telephone	4	4	4	0
3500		Administrative Services	41	41	41	0
		Subtotal from 3000	63	63	63	0

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NATIONAL GALLERY OF ART
SUMMARY OF FULL-TIME PERMANENT POSITIONS
BY FUNCTION AND DECISION CENTER
FOR THE FISCAL YEARS 1985 TO 1987

Code	Function - Decision Center	FY 1985	FY 1986	FY 1987	FY 1987 Increase (Decrease) Over FY 1986
4111	Secretary & General Counsel..	4	4	4	0
4211	Archives.....	2	2	2	0
	Subtotal from 4000.....	6	6	6	0
5000	Treasurer's Office.....	19	19	19	0
	Combined Total Function D..	88	88	88	0
	Summary of Functions				
	Function A -- Art Care.....	212	212	212	0
	Function B -- Ops. & Maint...	213	213	213	0
	Function C -- Protection.....	310	310	310	0
	Function D -- General Admin..	88	88	88	0
	Total -- National Gallery of Art.....	823	823	823	0

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Type size: 12 points 14 lt spacing Ref. AC code

OMB Exhibit 306 July 1985, Bureau of the Budget Circular No. A-11, Revised

NATIONAL GALLERY OF ART
SALARIES AND EXPENSES

DETAIL OF PERMANENT POSITIONS

	19 85 actual	19 86 estimate	19 87 estimate
GS/GM-16	2	2	2
GS/GM-15	8	8	8
GS/GM-14	11	11	12
GS/GM-13	21	21	22
GS-12	30	30	30
GS-11	39	42	42
GS-10	4	4	4
GS-9	39	39	39
GS-8	25	25	25
GS-7	57	58	60
GS-6	19	19	19
GS-5	82	82	83
GS-4	168	169	169
GS-3	46	58	58
GS-2	4	4	4
Subtotal GS/GM	555	572	577
Ungraded	185	185	187
Total funded permanent positions	740	757	764
OMB Limitation on Hiring (Bulletin 80-7)	83	66	59
Total permanent positions previously authorized	823	823	823

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(Mean cost: 39.3) (Mean cost: 4.9) (Mean cost: 4.9) (Mean cost: 4)

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NATIONAL GALLERY OF ART
Decision Centers

CODE	TITLE
1000	Director
1111	Office of the Director
2000	Deputy Director
2111	Office of Deputy Director
2200	Curatorial Programs
2211	Office of Chief Curator
2221	American Painting
2231	Graphic Arts
2241	European Painting
2251	Sculpture
2261	Twentieth Century
2300	Conservation & Restoration
2311	Office of Chief Conservator
2321	Painting Laboratory
2322	Paper Laboratory
2323	Sculpture Laboratory
2324	Frame Studio
2325	Matting & Framing
2326	Textile Laboratory
2327	Exhibits
2331	Analysis Laboratory
2400	Editor's Office
2411	Editor
2420	Photo Laboratory/Services
2421	Photo Laboratory
2422	Photo Services
2500	Educational Programs
2511	Office of Curator of Education
2521	Public Programs
2530	Extension Programs
2531	Extension Program Development
2532	Extension Services
2541	Audiovisual Coordination
2551	Slide Library

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CODE	TITLE
2600	Program Support Facilities
2611	Office of Chief Librarian
2621	Library
2631	Photographic Archives
2700	Exhibition Programs and Schedule
2711	Exhibition Programs
2721	Exhibition Schedule
2800	Records and Loans
2911	Records & Loans Office
2821	Art Movement
2831	National Lending Service
2900	Design, Installation and Planning
2911	Installation & Design
2921	Planning Office
2922	Construction Manager
3000	Administrator
3111	Office of the Administrator
3200	Operations & Maintenance
3211	Building Superintendent
3221	Operating Engineers
3231	Electrical Shop
3232	Electronics Shop
3241	Carpentry Shop
3242	Lock & Sign Shop
3251	Masonry Shop
3261	Sheet Metal & Plumbing Shop
3271	Paint Shop
3281	Horticultural & Grounds
3291	Day Laborers
3292	Night Laborers
3300	Security
3311	Security
3400	Procurement & Supply
3411	Procurement Office
3421	Supply Office

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CODE	TITLE
3500	Administrative Services
3511	Office Services
3521	Checkroom
3531	Mail, File, Record & Duplicating
3551	Telephone Office
3600	Personnel
3611	Personnel Office
3621	First Aid
3700	Publications Fund
3711	Publications Services
4000	Secretary-General Counsel
4111	Secretary-General Counsel Office
4211	Archives
5000	Treasurer
5111	Office of the Treasurer
5211	General Accounting
5221	Cash Room & Sales
5231	Payroll
5311	Systems Analysis & Design
5321	Computer Programming
5331	Computer Operations
6000	External Affairs
6111	External Affairs Office
6211	Information
6311	Corporate Relations
6411	Special Events
6511	Development
6611	Music
7000	CASVA
7111	CASVA

Decision Center--The organizational designation given to the Director and the Executive Officers and all subordinate organizational units.

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FUNCTION A
CARE AND UTILIZATION OF ART COLLECTIONS

Introduction

This function combines the art-oriented activities of the Director, the Deputy Director, and the Chief Curator. The Director is the Gallery's chief non-trustee executive officer and is responsible for overall management with responsibility for long-range planning for art, music, research and publications, and education. The Director is also responsible for all special events and all support activities and services.

The Deputy Director is responsible for initiating art acquisitions, and for the maintenance, display and elucidation of the works of art belonging to or on loan to the Gallery. Acquisition of art is accomplished through private gifts or purchases from non-federal resources, while the care, display, and elucidation of the Gallery collection are financed primarily from federal funds. Through curatorial, conservation and restoration programs, under the general supervision of the Chief Curator, the Deputy Director carries out his responsibility for acquiring and maintaining original works of art. The display of art to the general public, and the publication of information on it is the duty of a staff responsible for loans, scheduling, registration, the movement of art objects, installation and design of exhibitions, photography, editing and catalogue production. The objective of the educational programs staff is to ensure dissemination of knowledge of art and make the art accessible to as many people as possible throughout the nation. This is accomplished by in-house lectures and tours, as well as through the outreach programs of the Gallery's extension service, and through reproductions, tapes, films, and books. The extension service distributes information primarily to schools and other institutions and groups throughout the 50 states.

As detailed in our overview (pp. 1-13 to 1-16), the Conservation Division is responsible for the preservation of the collections and technical research as a support function for scholarly studies and as basic investigations in art materials and the history of technology.

All of the above programs rely on the resources of an extensive art reference library and photo archives and art information data bank which are used as research and educational resources for studying the collections, potential acquisitions, and exhibitions as well as disseminating the knowledge of art to the general public.

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The magnitude of the art collections in the National Gallery's care and the general public's interest in them can be suggested by summary statistics. The National Gallery has sizeable collections: 2,541 paintings; 1,901 sculptures; 80,885 works of graphic art; 310,207 books and documents and 3,867,597 photographic images in its Research Library; and 1,655 photographic works of art (Stieglitz Collection). These collections, augmented by the 21 temporary exhibitions held during FY 1985 (see Special Exhibition discussion in Tab 4A), attracted over 5 million visitors to the National Gallery.

The audience served by the National Gallery was broadened by the extension service, which develops, produces and circulates films, color slide programs, and videotapes based upon the Gallery's collections and exhibitions. In FY 1985, bookings for these materials totaled 70,929, reaching an audience of 125,569,311 persons in almost 5,000 communities throughout the United States. The Gallery's educational talks in the Gallery during FY 1985 alone served an audience of 264,114 persons.

A total of 212 full-time permanent positions have been established to provide proper support for the direct and supporting activities associated with the care and utilization of art. For FY 87 the overall ceiling limitation by OMB results in an estimated 218 full-time equivalent (FTE) employment for this function.

FY 1987 Request

Funding of $12,173,000 is requested in FY 1987 for the activities comprising the care and utilization of art. This represents an increase of $670,000 above the FY 1986 funding level for this function. The comparative budget levels for FY 1986 and FY 1987 are displayed in the following table:

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NATIONAL GALLERY OF ART
FISCAL YEAR 1987 BUDGET
SUMMARY OF INCREASES AND (DECREASES)
FUNCTION A

OBJECT CLASS	FY 1986	FY 1987	FY 1987 Over/(Under) FY 1986
Personnel Compensation	$ 5,988,000	$ 6,272,000	$ 284,000
Personnel Benefits	771,000	809,000	38,000
Subtotal--Compensation and Benefits	6,759,000	7,081,000	322,000
Travel of Persons	79,000	110,000	31,000
Transportation of Things	20,000	20,000	-
Rent, Communications & Utilities	137,000	106,000	(31,000)
Printing & Reproduction	214,000	224,000	10,000
Other Services	984,000	1,190,000	206,000
Supplies & Materials	549,000	561,000	12,000
Equipment	561,000	461,000	(100,000)
Land & Structures	-	-	-
Subtotal -- One Year Funds	9,303,000	9,753,000	450,000
NO YEAR FUNDS			
Special Exhibitions:			
Travel	120,000	100,000	(20,000)
Transportation	700,000	830,000	130,000
Services	880,000	960,000	80,000
Supplies	500,000	530,000	30,000
Subtotal -- Special Exhibits	2,200,000	2,420,000	220,000
TOTAL	$11,503,000	$12,173,000	$ 670,000
Budget after Sequestering:			
One Year Funds	$ 8,902,000		
Special Exhibitions	2,105,000		
TOTAL	$11,007,000		

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1. Personnel Compensation and Benefits--Increase of $322,000. This increase will be applied as follows:

Item	Amount
Mandatory within-grade promotions and wage-board step increases	$ 90,000
Annualize pay cost of 5 new conservation positions	63,000
Recalculate pay for 2,080 Hours	22,000
Increase of 5 FTE employment workyears for full-time permanent positions as noted below	147,000
Total	$322,000

a. Position for Planning Office ($50,000)

Position	Grade	Annual Salary
Space Planner/Department Head	GS-14	$44,500
Basic Salary		44,500
Personnel Benefits		5,500
Total Salary & Benefits		$50,000

The Space Planner/Department Head is required to analyze needs, propose solutions, produce working drawings, and supervise construction and installation. The position requires a high degree of design skill because work must conform to the high standards of the original architecture of the East and West Buildings.

b. Positions for Corporate Relations Office ($63,500)

Positions	Grade	Annual Salary
Corporate Relations Officer	GS-13	$ 38,000
Researcher/Clerk	GS-7	18,000
Basic Salary		56,000
Personnel Benefits		7,500
Total Salary & Benefits		$ 63,500

The Corporate Relations Officer position is presently staffed by a contract employee whose duties include the solicitation of Corporate funds in support of Special Exhibitions and in behalf of the Gallery's Patrons'

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Permanent Fund (art acquisition endowment). The GS-13 position to be authorized for fiscal 1987 will make this position and the accompanying Researcher Clerk a part of the permanent staff.

The Researcher/Clerk is required to develop and maintain a corporate reference library, and a computer driven information retrieval system; to audit newspapers and periodicals, prepare initial layout and design of special exhibition presentation books, and also receive and assist corporate visitors.

This Corporate Relations function will thus be formalized. It represents not only a response to the wishes of the Congress that an on-going program of private support for special exhibitions be in place, but also provides a focus within the Gallery's general development program for exploiting opportunities in the corporate sector.

c. Position for Development Office ($20,500)

Position	Grade	Annual Salary
Secretary/Data Processor.....	GS-7	$ 18,000
Basic Salary.....		18,000
Personnel Benefits		2,500
Total Salary & Benefits		$ 20,500

The Secretary-Data Processor will be the point of input for all development information - to maintain the central computer listing of persons important to the Gallery and involvement with the Gallery; to provide interface not only within the development effort but also with other Gallery programs such as the National Lending Service, Extension Programs, Exhibitions and Loans, etc., where cross provision of information electronically is beneficial to the Gallery's mission.

d. Position for Educational Services ($16,500)

Position	Grade	Annual Salary
Assistant Slide Librarian.....	GS-5	$ 14,500
Basic Salary.....		14,500
Personnel Benefits.....		1,500
Total Salary & Benefits		$ 16,000

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It is imperative that the Slide Library have an additional assistant in the Slide Library, (GS-5) to serve adequately the Gallery curators, CASVA scholars, invited guest lecturers, local educators and the public. Use of the slide library has increased steadily in recent years, especially as educational programs have expanded. Close to 1,000 slides are accessioned each month. Binding, labeling, cleaning, and filing slides can only be done by hand. With the present staff of 3, it will take over 2 years to process the Slide Library's current backlog of approximately 16,000 unbound and uncatalogued slides even if no further slides are acquired. If these slides were available the public would be better served.

2. Travel -- Increase of $11,000.

a. Professional and Development travel.

We expect the needs for travel in various categories to remain relatively constant in the current year. Having been granted a recent increase, we believe most requirements can now be met with proper monitoring and planning. An increase of $31,000, or about 39%, is requested to keep up with the general rise in travel costs, both domestic and foreign, and to fulfill incremental requirements, particularly those of development travel.

Our expenditures for travel are likely to remain as stated in previous submissions, with the approximate percentages for each category as follows:

40% - catalogue preparation (research)
25% - professional meetings/symposia
20% - donor contacts
10% - dealer contacts
5% - visits to other collections (largely to gather conservation data)

Professional travel (by conservators, curators, librarians, etc.) continues to be essential for examining works of art and rare books in other public and private collections, and especially for research in relation to our increasing pace of work in publishing the systematic catalogues of all the Gallery's collections.

In addition, now that we have incremental funds to use for development travel, we expect to fulfill our obligations to cultivate donors, make presentations to potential corporate supporters, and articulate the Gallery's services to the public in diverse regions of the country.

b. Special Exhibitions travel.

Travel for special exhibitions will decrease $20,000 in FY 1987.

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3. Transportation -- Increase of $130,000.

A total increase of $130,000 is requested for Special Exhibition transportation. Please refer to Tab 4A.

4. Rent, Communications and Utilities -- Decrease of ($31,000).

A total decrease of $31,000 is requested for rent at the current policy level. This is to cover the decreased costs of word processing equipment.

5. Printing and Reproduction -- Increase of $10,000.

Printing and Reproduction will require an increase of $10,000. This increase will be applied toward increased costs of printing information booklets, calendar of events, Gallery leaflets, extension service catalogs, and other productions of the Gallery.

6. Other Services -- Increase of $286,000.

Other services will require $2,150,000 in FY 1987, an increase of $286,000 over FY 1986. Increases for specific services needed under the care and utilization of art are as follows:

Description	1986 Budget	1987 Request	FY 1987 Increase Over FY 1986
Special Exhibitions.	$ 880,000	$ 960,000	$ 80,000
Art Restoration.....	200,000	220,000	20,000
Extension Services..	130,000	130,000	-
Data Processing.....	495,000	681,000	186,000
Cataloging Services.	56,000	56,000	-
All Other.....	103,000	103,000	-
	$1,864,000	$2,150,000	$ 286,000

The special exhibitions program will require an increase in services at the Current Policy level in FY 1987. Please see Tab 4A for a detailed discussion of the Special Exhibitions program.

An increase of $20,000 is requested for art restoration in FY 1986 at the Current Policy level.

As work on the preservation of the collection continues, the need for specialized assistance in the treatment of works of art is necessary. As a means of dealing with unique problems, creating attractive monetary enticements for hard

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to find specialists, and ways of increasing the utilization of the laboratory, use of contract specialists have been implemented. Contract funds have allowed the division to solve unique problems within the collection without having to hire a full time staff member. The contract funds allow the conservation departments to select experts, to be hired for a finite period to work on specific projects. Demands in this funding area have grown significantly over the last several years. Additions to this budget will enable the division to contract many of the most urgently needed treatment projects.

Data processing services costs will increase by $186,000 at the Current Policy level over the FY 1986 level. This represents an increase of $102,000 in on-site EDP services for the Art Care function and an increase of $84,000 for data processing services for the Library. The $102,000 is being transferred from Function D for emphasis on the Art Information system. Please refer to Tab 7A for a discussion of this program.

The $84,000 increase in EDP services for the Library will enable the Library to continue its plans for an automated Integrated Library System.

The Integrated Library System (ILS) is the most advanced automated system available to libraries today. The objective of the system, developed as a federally funded research and development project, is to support all library activities using a single master bibliographic file. These fundamental library activities include: circulation, acquisitions, cataloging, online catalog access, serials control, and administration.

With this system, the Library staff will achieve much improved collection management and control, will provide faster and more efficient services, and expect to realize lower per-unit costs for all functions. In selecting this system, we have evaluated all known integrated library systems in the United States, Canada, and Europe. This system best meets our present and anticipated future needs.

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7. Supplies and Materials -- Increase of $42,000.

A total of $1,091,000 is requested in FY 1987 for supplies and materials related to the care and utilization of art. This amount represents an increase of $42,000 above the FY 1986 level, as detailed below:

Description	1986 Budget	1987 Request	FY 1987 Increase Over FY 1986
Special Exhibitions.....	$ 500,000	$ 530,000	$ 30,000
Office.....	52,000	52,000	-
Conservation.....	63,500	63,500	-
Library.....	15,000	15,000	-
Photo Archives.....	25,000	25,000	-
Photo Lab.....	55,000	55,000	-
Extension Service.....	96,000	96,000	-
Newspapers, periodicals pamphlets & documents..	109,000	109,000	-
Audio Visual.....	28,000	28,000	-
Other supplies.....	105,500	117,500	12,000
	$1,049,000	$1,091,000	$ 42,000

A total of $12,000 is requested for supplies for the National Lending Service (NLS). This amount is for materials to construct reuseable crates for a series of new NLS exhibitions.

A total of $30,000 is requested for Special Exhibition supplies and materials. Please refer to Tab 4A for a full discussion of this program.

8. Equipment - Decrease of ($100,000).

Capital equipment for basic operations reflects a decrease of $100,000.

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NATIONAL GALLERY OF ART
FUNCTION A OVERVIEW - SPECIAL EXHIBITIONS

The National Gallery of Art's special exhibitions program faces severe financial restraints by virtue of the long-term erosion through inflation of the purchasing power of its government appropriation (see pages 4-14 and 4-15), which has not increased over the 1979-80 level, at an average rate of inflation of 6%, and has suffered intermittent cutbacks in the meantime. During the same period, the costs of transportation, construction, and art insurance have been rising at a faster rate than prices generally. The system of no-year money will make it possible to build in the necessary flexibility in the face of the unpredictability of private sector support and the difficulties of accurate budgeting three years in advance; but the time has come to review this annual level of Federal participation. The number of loan exhibitions is expected to remain relatively constant. A chart of the historic experience and projected expectations is included on page 4-16.

The National Gallery serves a special function in the education of the American people. Thus, the exhibition of The Sculpture of India: 3000 B.C. to 1300 A.D. at the National Gallery was conceived as the inaugural cornerstone to the 80-city, 18 month long "Festival of India" in the United States, an unprecedented cultural exchange between the two largest democracies. A presentation of the same exceptional level of quality was Leonardo to Van Gogh: Master Drawings from Budapest. This exhibition, a major collaborative effort between an Eastern European and American museums, included drawings by Durer, Leonardo da Vinci, Raphael, Watteau, Van Gogh, and others which have never before been seen outside of Hungary. The current exhibition of The Treasure Houses of Britain: 500 Years of Private Patronage and Art Collecting, presents to the United States more than 800 works of art including Old Master paintings, sculpture, and furniture, representing a half a millenium of art collected for British castles, villas, and palaces, which directly forms the background for our own country's artistic culture. This exhibition, presented with the cooperation of the British Government, is one of the most important and logistically complex exhibitions ever undertaken.

In addition to the splendid group of international exhibitions planned for 1986, American art will be represented at a very high level of achievement. The exhibition of Winslow Homer's Watercolors will present 100 works of art long recognized to be among the purest accomplishment in American art as well as in the history of their medium. The exhibition will focus on certain subjects that interested Homer as subject matter -- the sea, boats, the woods, women, and children.

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The National Gallery has a distinguished tradition of introducing the art of all nations to the American people, including such exhibitions as Treasures of Tutankhamun, Archaeological Finds of the People's Republic of China, The Splendor of Dresden, The Search for Alexander, and The Art of Aztec Mexico. Exhibitions from France, Great Britain, Holland, Israel, Italy, Japan, Turkey, West Germany, figure prominently in the 1987 budget and schedule. In addition, the Gallery's exhibitions program continues to spotlight aspects of the art of our own country.

In 1987 we plan to take advantage of several exhibition opportunities of great importance, both in terms of their educational content and expected public appeal. To summarize the most prominent: a large exhibition of the painting of Henri Matisse, who, with Picasso, is considered the greatest twentieth-century artist; a major exhibition with Japan of the centuries-old Hosokawa Shogun family collection, a presentation proposed by Prime Minister Nakasone; an exhibition of Turkish (Ottoman) art of the Age of Suleiman the Magnificent, largely from the celebrated Topkapi Museum in Istanbul; and an exhibition of the art of the early twentieth-century sculptor Alexander Archipenko, in collaboration with the Tel Aviv Museum, the first time the National Gallery has had an opportunity to share an exhibition with an Israeli museum.

We are very pleased to report that, in keeping with Congress' request that we seek private support to augment our appropriation for special exhibition, the National Gallery of Art has secured a grant from AT&T of $750,000 toward the shared costs of the exhibition, The New Painting: Impressionism, 1874-1886, the comprehensive centennial exhibition of this popular artistic movement. This grant follows the largest contribution ever pledged to support an exhibition here, the Ford Motor Company's contribution of $1.5 million to support THE TREASURE HOUSES OF BRITAIN: 500 Years of Private Patronage and Art Collecting.

Major loan exhibitions have been directly responsible not only for the significant rise in the number of visitors to the National Gallery of Art, but, through our Extension Service, for making educational materials based on the exhibitions available at no charge to classrooms throughout the nation. In a recent survey of 1,500 visitors to the National Gallery, all fifty states and fifty-five foreign countries were represented. When attracted by the magnetism of special exhibition programs, visitors to the National Gallery also take advantage of the opportunity to enjoy and study the Gallery's permanent collections.

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In the long term, we believe that it would be fully justifiable for the Gallery to have its exhibition program completely supported by federal appropriation, as are its other day-to-day public educational and art-care undertakings. Corporations have recently been shifting their giving away from museums and art exhibitions into other areas in view of federal cut-backs along a broad front of educational and social services.

Federal contributions to the National Gallery's special exhibition program have a multiplier effect, because other museums in this country often look to the Gallery in the first instance to organize major travelling exhibitions. Thus, the federal contribution is leveraged when monies are developed locally by subsequent exhibitors. The high standards of the National Gallery's exhibition organization and design have become a benchmark for other museums in this country and abroad, and museum professionals use the Gallery's staff as a resource in such diverse areas as installation design, automated financial reporting, publications, and contracts. This national resource, a spin-off of our exhibition programs, makes special demands of the Gallery's staff and limited budget.

The increased emphasis on responsible fiscal reporting makes it essential that our budget estimates be as accurate as possible. For this reason, we have exerted our best efforts in submitting a realistic budget estimate for our special exhibition programs so that it is adequately funded on a line-by-line basis.

It seems appropriate, therefore, to highlight the significance of the exhibition programs' portion of the Gallery's budget by summarizing it in a separate section of our submission.

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Thirteen schedules are included on subsequent pages as follows:

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2.	Analysis - Special Exhibitions Material Costs 1980 vs 1985	4-15
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11.	Special Exhibitions - Fiscal Year 1981	4-24
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13.	Special Exhibitions Source and Application of Funds - Fiscal Year 1980-1987	4-26

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NATIONAL GALLERY OF ART
SPECIAL EXHIBITIONS
COMPARISON OF FEDERAL APPROPRIATIONS WITH INFLATION
FOR THE ELEVEN FISCAL YEARS 1980-1990
(ACTUAL APPROPRIATION SHOWN THROUGH FY 1986)

Fiscal Year	Base Year 1980	Average Inflation Projected @ 6%/Year	Total Needed To Remain Level	Actual Federal Appropriation
1980	$1,650,000	$ 99,000	$1,749,000	$1,650,000
1981	1,749,000	105,000	1,854,000	1,672,000
1982	1,854,000	111,000	1,965,000	1,810,000
1983	1,965,000	118,000	2,083,000	1,360,000
1984	2,083,000	125,000	2,208,000	1,610,000
1985	2,208,000	132,000	2,340,000	3,912,000
1986	2,340,000	140,000	2,480,000	2,200,000
1987	2,480,000	149,000	2,629,000	2,420,000*
1988	2,629,000	158,000	2,787,000	-
1989	2,787,000	167,000	2,954,000	-
1990	2,954,000	177,000	3,131,000	-

* Approved by OMB.

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National Gallery of Art
Analysis of Special Exhibitions Materials and Supplies Cost
Comparison of FY 1980 with FY 1986

The increases in costs of materials and supplies caused by inflation places a severe strain on the base resources needed to maintain the Gallery's special exhibition program. As illustrated by the following table, the materials used to mount exhibitions are becoming increasingly costly.

Exhibition Materials

Item	FY1980	FY1985	Percent Increase
Construction			
One sheet 1/2" Wallboard 4' x 8'	$ 5.24	$ 7.27	39%
One sheet 1/2" MDO Plywood 4' x 8'	27.36	31.36	15
25 pounds Durabond Compound	5.75	8.95	56
One ten foot length Spruce 2" x 4"	2.40	3.66	53
One fourteen foot length Spruce 2" x 4"	3.36	5.12	26
Electrical/Lighting			
One foot ATJT Lighting Track	6.00	9.00	50
One 500 watt Narrow Spot 120 volt lamp	13.16	31.35	138
One 150 watt Flood 120 volt lamp	1.72	4.80	179
Silkscreen			
One gallon Nax Dar white opaque poster ink	19.12	27.55	44
One coated quart can with lid	.90	1.49	66
One pound Cloths	1.50	2.75	83
One yard of White Nylon	7.75	9.21	19
Display (Matting/Cases)			
One sheet 1/8" Clear Plexiglass 4' x 8'	36.16	53.76	49
One sheet 1/4" Clear Plexiglass 4' x 8'	56.32	83.20	48

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NATIONAL GALLERY OF ART
SPECIAL EXHIBITIONS SINCE 1970
BY YEAR OF OPENING

Summary and Analysis

FY	Standard Loan Exhibitions	One-Picture Loan Exhibitions	In-House Temporary Exhibitions	Total Special Exhibitions
1970	8	0	7	15
1971	6	0	8	14
1972	6	0	6	12
1973	4	0	4	8
1974	6	0	5	11
1975	2	1	5	8
1976	6	0	2	8
1977	5	0	3	8
1978	4	0	5	9
1979 (E. Bldg. open)	12	0	7	19
1980	11	0	2	13
1981	9	2	1	12
1982	12	2	2	16
1983 (W. Bldg. renovation)	14	2	9	25
1984	18	1	5	24
1985 (est.)	16	1	5	21
1986 (est.)	13	1	6	20
1987 (est.)	14	0	5	19

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NATIONAL GALLERY OF ART
SUMMARY OF SPECIAL EXHIBITION EXPENSES AND FUNDING SOURCES
FOR THE EIGHT FISCAL YEARS 1980 THROUGH 1987
($ in 000's)

Type of Expense	1980 Actual %	1980 Actual Amt.	1981 Actual %	1981 Actual Amt.	1982 Actual %	1982 Actual Amt.	1983 Actual %	1983 Actual Amt.	1984 Actual %	1984 Actual Amt.	1985 Actual %	1985 Actual Amt.	1986 Estimated %	1986 Estimated Amt.	1987 Estimated %	1987 Estimated Amt.
Travel	5%	$ 127	5%	$ 114	5%	$ 117	5%	$ 154	7%	$ 156	5%	$ 230	4%	$ 200	2%	$ 107
Transportation	10	362	15	384	9	208	13	407	20	442	5	261	25	1,392	30	1,360
Services	55	1,359	46	1,139	54	1,225	45	1,367	41	929	60	3,034	36	1,981	28	1,301
Supplies	18	438	19	483	17	389	12	357	13	293	15	764	16	852	14	626
Other Expenses*	12	301	15	371	15	348	25	773	19	440	15	757	19	1,046	26	1,184
TOTAL EXPENSES	100%	$2,587	100%	$2,491	100%	$2,287	100%	$3,058	100%	$2,260	100%	$5,046	100%	$5,471	100%	$4,578
Source of Funds																
Federal Funds	72%	$1,862	68%	$1,699	79%	$1,818	44%	$1,355	59%	$1,323	50%	$2,531	56%	$3,043	61%	$2,778
Non-Federal Funds	28	725	32	792	21	469	56	1,703	41	937	50	2,315	44	2,428	39	1,800
TOTAL FUNDING SOURCES	100%	$2,587	100%	$2,491	100%	$2,287	100%	$3,058	100%	$2,260	100%	$5,046	100%	$5,471	100%	$4,578

* Other Expenses includes charges for insurance, security, inspection and other fees.

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NATIONAL GALLERY OF ART
SPECIAL EXHIBITION SCHEDULE
ESTIMATED OBLIGATIONS FOR FISCAL YEAR 1987

Date	Special Exhibition	Location	Travel	Packing & Transportation	Services, Fees & Install.	Supplies	Insurance	Other*	Total
06/86-09/86	Berlin	EB	$ -	$ 50,000	$ -	$ -	$125,000	$ -	$ 175,000
10/86-01/87	Sir Alfred Gilbert	EB	-	25,000	10,000	10,000	5,000	6,000	56,000
11/86-01/87	Age of Bruegel	EB	1,000	40,000	6,000	2,000	7,000	13,000	69,000
11/86-03/87	Matisse	EB	2,000	150,000	103,000	50,000	51,000	90,000	448,000
11/86-02/87	Archipenko	EB	2,000	50,000	10,000	4,000	20,000	40,000	126,000
12/86-02/87	Bologna	WB	2,000	275,000	15,000	15,000	150,000	-	457,000
02/87-05/87	Suleyman	WB	3,000	100,000	200,000	100,000	5,000	71,000	479,000
03/87-09/87	Heinz Dutch Still Lifes	EB	1,000	10,000	13,000	5,000	5,000	20,000	56,000
09/87-11/87	Berthe Morisot	WB	8,000	50,000	40,000	10,000	15,000	30,000	153,000
09/87-01/88	Rosso	WB	2,000	125,000	20,000	10,000	10,000	19,000	136,000
09/87-02/88	Sackler bronzes	EB	1,000	10,000	60,000	25,000	5,000	38,000	139,000
10/87-01/88	Camelot?	EB	5,000	125,000	80,000	40,000	40,000	60,000	350,000
11/87-02/88	Japan	EB	20,000	70,000	340,000	120,000	100,000	65,000	715,000
12/87-02/88	Corning Glass	WB	5,000	15,000	70,000	70,000	3,000	16,000	179,000
02/88-04/88	Rembrandt	EB	5,000	-	25,000	30,000	-	-	60,000
04/88-07/88	Paul Gauguin	EB	10,000	-	10,000	-	-	-	20,000
10/88-01/89	Veronese	EB	10,000	-	20,000	-	-	-	30,000
	Major Unknown (Summer Show)	EB	10,000	-	10,000	-	-	-	20,000
	Minor Unknown	EB	10,000	115,000	135,000	50,000	50,000	80,000	420,000
	All Others	WB	5,000	50,000	30,000	20,000	25,000	20,000	150,000
			5,000	100,000	100,000	75,000	20,000	-	300,000
			$107,000	$1,360,000	$1,301,000	$626,000	$616,000	$568,000	$4,578,000

*Other — Includes expenses such as security, inspection, opening dinners and other costs.

Application of Funds (By Type of Expense)

	Travel	Packing & Transportation	Services, Fees & Install.	Supplies	Insurance	Other*	Total
Federal Funds	$ 40,000	$1,017,000	$1,115,000	$466,000	$ -	$ -	$2,778,000
Non-Federal Funds	67,000	343,000	186,000	20,000	616,000	568,000	1,800,000
Totals	$107,000	$1,360,000	$1,301,000	$626,000	$616,000	$568,000	$4,578,000

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NATIONAL GALLERY OF ART
SPECIAL EXHIBITION PROGRAM
ESTIMATED OBLIGATIONS FOR FISCAL YEAR 1986

Date	Special Exhibition	Location	Travel	Packing & Transportation	Services, Fees & Insurance	Supplies	Insurance	Other*	Total
03/85-08/85	Woodland Indians	EB	$ -	$ -	$ 73,000	$ -	$ -	$ -	$ 73,000
04/85-09/85	Dulwich	EB	-	22,000	4,000	-	-	-	26,000
05/85-04/86	Twentieth Century Art	EB	-	20,000	230,000	221,000	9,000	-	500,000
10/85-01/86	Ansel Adams	WB	-	5,000	4,000	5,000	1,000	35,000	50,000
10/85-01/86	Stockholm	WB	3,000	-	39,000	2,000	-	30,000	74,000
12/85-03/86	Titian's Playing of Marsyas	WB	-	30,000	3,000	3,000	14,000	5,000	55,000
01/86-04/86	Impressionism	WB	15,000	163,000	77,000	15,000	78,000	90,000	440,000
03/86-05/86	Winslow Homer Watercolors	WB	8,000	25,000	17,000	17,000	15,000	32,000	114,000
03/86-05/86	De Chirico	WB	2,000	23,000	7,000	2,000	15,000	5,000	56,000
03/86-09/86	Ringling Collection	WB	2,000	-	2,000	5,000	-	6,000	15,000
06/86-09/86	Berlin	EB	20,000	123,000	248,000	150,000	125,000	64,000	732,000
06/86-09/86	George Inness	WB	5,000	5,000	65,000	15,000	5,000	30,000	125,000
06/86-11/86	Masterpieces of Amer. Furniture	WB	2,000	-	60,000	25,000	-	30,000	117,000
09/86-11/86	Master Bronzes from Vienna	WB	5,000	-	100,000	20,000	-	30,000	145,000
10/86-01/87	Sir Alfred Gilbert	EB	10,000	25,000	60,000	60,000	22,000	65,000	242,000
11/86-02/87	Age of Brunel	EB	8,000	25,000	45,000	30,000	5,000	12,000	125,000
11/86-03/87	Matisse	EB	10,000	35,000	10,000	2,000	2,000	-	59,000
11/86-02/87	Archipenko	EB	25,000	50,000	72,000	23,000	16,000	-	186,000
01/87-05/87	Suleymann	WB	5,000	50,000	60,000	35,000	20,000	-	170,000
	All Others		10,000	-	30,000	-	-	-	40,000
	Subtotal		50,000	50,000	150,000	20,000	20,000	-	300,000
			180,000	657,000	1,396,000	652,000	357,000	424,000	3,666,000
11/85-03/86	Treasure Houses of Britain	EB	20,000	735,000	565,000	200,000	10,000	275,000	1,805,000
	Totals		$200,000	$1,392,000	$1,961,000	$852,000	$367,000	$699,000	$5,471,000

*Other — Includes expenses such as security, inspection, opening dinners and other costs.

Application of Funds (By Type of Revenue)

	Travel	Packing & Transportation	Services, Fees & Insurance	Supplies	Insurance	Other*	Total
Federal Funds	$ 60,000	$ 642,000	$1,309,000	$852,000	$ -	$ -	$3,043,000
Non-Federal Funds	140,000	750,000	652,000	No. 000	367,000	699,000	2,428,000
Totals	$200,000	$1,392,000	$1,961,000	$852,000	$367,000	$699,000	$5,471,000

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NATIONAL GALLERY OF ART
SPECIAL EXHIBITION SCHEDULE
ACTUAL OBLIGATIONS FOR FISCAL YEAR 1985

Special Exhibition	Travel	Packing & Transportation	Services, Fees & Install.	Supplies	Other*	Total
Pato (FY 1983)	$ -	$ -	$ 212	$ -	$ 10,556	$ 10,768
Folding Image	145	3,107	32,499	-	9,146	44,897
Legacy of Correggio	125	9,109	12,331	23	(400)	21,188
Watteau	6,605	24,970	10,503	-	3,692	45,779
Orientalists	2,827	68,632	3,776	-	17,595	92,830
Ambrosiana	-	-	11,415	-	2,587	14,002
Subtotal FY 1984 Opening	9,702	105,827	70,524	23	32,620	218,696
Garbisch/Audubon	208	-	8,493	2,441	-	11,142
Albertina Drawings	-	-	5,705	7,709	57,075	70,489
Gemini Prints	3,247	14,373	99,726	26,884	27,671	171,901
Degas	2,044	46,181	79,658	10,604	33,504	171,991
Washington Prints	-	157	4,345	826	12,008	17,336
Armand Hammer	-	-	4,144	3,653	40,419	48,216
Prendergast	-	700	7,442	3,974	13,918	26,034
Leonardo's Horse Drawings	(24)	3,398	53,569	3,589	18,301	78,833
Prehistoric Woodlands	5	-	35,677	11,711	5,367	52,760
Dulwich Drawings	(5,746)	4,742	57,317	9,916	104,001	170,230
Sculpture of India	17,935	37,268	243,687	85,074	158,903	542,867
Stubbs	1,093	10,470	18,701	6,622	9,785	46,671
Budapest	2,525	735	10,597	6,815	10,009	30,681
Twentieth Century Art	1,121	5,147	175,162	26,073	-	207,523
Baer Collection	-	-	3,000	1,034	4,702	10,736
Kainen	-	-	16,132	6,926	874	23,932
Small French Paintings	-	-	24,127	6,448	-	30,575
Rotating Prints & Drawings	-	-	11,111	6,329	-	17,440
Subtotal FY 1985 Opening	22,408	123,171	860,613	226,628	496,337	1,729,357
Ansel Adams	-	4,830	5,542	3,752	42,006	56,130
Treasure Houses of Britain	112,159	13,696	1,967,881	496,257	23,010	2,613,003
Impressionism	206	-	105	2,236	3,982	6,529
Berlin Masterpieces	14,130	137	40	-	-	14,307
Age of Bruegel	14,359	-	325	20	-	14,704
Matisse	7,001	-	24,123	142	-	31,266
Archipenko	2,593	-	16,750	-	-	19,343
Bologna	771	-	9,735	724	-	11,230
Sulayman	8,904	14	12,177	357	78	21,530
Subtotal FY 1986 & 1987	160,123	18,677	2,036,678	503,488	69,076	2,788,042
All Others	37,562	13,988	66,091	34,189	158,666	310,496
Totals	$229,795	$261,663	$3,033,906	$764,328	$756,899	$5,046,591

*Other--Includes expenses such as insurance, opening dinners and other costs.

	Application of Funds (By Type of Expense)					
Source of Funds	Travel	Packing & Transportation	Services, Fees & Install.	Supplies	Other	Total
Federal Funds	$ 28,401	$206,529	$1,532,827	$763,714	$ -	$2,531,471
Non-Federal Funds	201,394	55,134	1,501,079	614	756,899	2,515,120
Totals	$229,795	$261,663	$3,033,906	$764,328	$756,899	$5,046,591

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NATIONAL GALLERY OF ART
SPECIAL EXHIBITION SCHEDULE
ACTUAL OBLIGATIONS FOR FISCAL YEAR 1984

Special Exhibition	Travel	Packing & Transportation	Services, Fees & Install.	Supplies	Other*	Total
Claude	$ -	$ 1,065	$ 16,113	$ -	$ 1,590	$ 18,768
Foto	-	5,928	3,011	-	1,509	10,448
Stieglitz	-	1,738	9,082	6,582	-	17,402
Whitney Collection	987	10,338	3,631	442	16,014	31,412
Arp/Dada Reliefs	110	18,862	3,673	-	418	23,065
Aztec	2,690	94,673	(6,123)	22,024	57,589	171,753
Subtotal FY 1983 Opening	3,787	132,604	29,387	29,048	77,120	272,848
Juan Gris	-	933	69,500	20,892	27,350	118,675
Piazzetta	224	44,734	21,485	3,446	8,038	77,927
Modigliani	-	6,856	5,982	4,351	9,408	26,597
Woodner Drawings	350	1,111	7,094	1,422	16,954	26,931
Leonardo - Last Supper	-	20,829	76,458	14,317	46,124	157,728
Caravaggio's Deposition	-	3,967	8,795	355	538	13,655
Folding Image	3,153	2,703	163,620	19,525	82,071	271,074
Mark Tobey	96	14,343	8,987	2,949	5,805	32,180
Gulo Exchange	74	2,881	67	-	12,271	15,293
Rothko	107	10,200	24,700	8,952	14,599	58,558
German Drawings	1,883	17,609	7,242	1,032	9,492	37,258
Watteau	19,152	35,342	74,361	37,683	36,337	202,875
Orientalists	6,895	56,237	75,663	40,976	41,383	221,154
Ambrosiana	859	-	13,438	892	2,243	17,432
Subtotal FY 1984 Opening	35,573	263,309	580,920	159,254	350,336	1,389,392
Thomas Moran Watercolors	934	-	7,658	2,090	285	10,987
Garbisch/Audubon	-	-	9,764	12,856	10	22,630
Albertina Drawings	285	8,000	35,519	2,114	3,798	51,716
Gemini Prints	5,287	1,539	11,106	30,080	10	48,022
Degas Dancers	-	1,738	9,082	6,582	-	17,402
Leonardo's Horse Drawings	-	-	15,437	-	-	15,437
India Sculpture	16,105	-	27,332	875	-	44,312
Treasure Houses of Britain	57,620	82	99,309	9,678	1,884	168,573
Subtotal FY 1985 & 1986	80,231	11,359	215,207	64,275	7,987	379,079
All Others	36,754	14,944	102,898	39,607	24,562	218,787
Totals	$156,365	$442,238	$ 928,414	$293,084	$440,005	$2,260,106

*Other--Includes expenses such as insurance, opening dinners and other costs.

Source of Funds	Application of Funds (By Type of Expense) Travel	Packing & Transportation	Services, Fees & Install.	Supplies	Other	Total
Federal Funds	$ 68,062	$383,283	$ 591,370	$279,981	$ -	$1,322,696
Non-Federal Funds	88,303	58,955	337,044	13,103	440,005	937,410
Totals	$156,365	$442,238	$ 928,414	$293,084	$440,005	$2,260,106

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NATIONAL GALLERY OF ART
SPECIAL EXHIBITION SCHEDULE
ACTUAL OBLIGATIONS FOR FISCAL YEAR 1983

Special Exhibition	Travel	Packing & Transportation	Services, Fees & Install.	Supplies	Other*	Total
Mauritshuis	$ 835	$ 7,225	$ 15,130	$ 52	$ -	$ 23,242
Bellows	114	1,253	40,775	2,252	1,883	46,277
Juan Gris	-	-	36,356	6,616	93	43,265
Claude Lorrain	20,638	43,648	49,264	15,016	53,902	182,468
Braque Collage	718	5,898	24,233	4,599	15,493	50,941
David Smith	1,627	84,587	137,239	60,864	65,960	350,277
Aztec	27,442	74,592	170,772	15,901	59,793	348,500
Stieglitz	759	3,255	18,905	10,489	29,984	63,392
Raphael	16,347	17,354	150,151	49,414	41,362	274,628
Night Prints	-	-	11,040	3,823	2,909	17,772
Morse/Louvre	-	-	14,761	-	-	14,761
Manet & Modern Paris	7,642	47,374	51,036	23,615	84,732	214,399
Arp/Deda	5,062	1,910	25,933	6,508	9,742	49,155
Treasure Houses of Britain	13,588	54	44,149	9,843	-	67,634
Oslo Exchange	3,980	3,810	1,652	-	14,631	24,073
Whitney Collection	1,246	8,009	38,624	15,196	67,882	130,957
Lucas Van Leyden	4,559	4,607	24,206	3,816	6,733	43,921
Caravaggio-Naples	13,141	83,182	327,513	75,731	75,242	574,809
Pato	1,770	9,484	21,118	9,315	76,884	118,571
Holy Roman Empire	465	-	10,171	3,559	546	14,741
De Menil	1,859	9,456	25,872	2,931	23,729	63,847
El Greco	(3,399)	-	954	1,206	20,068	18,829
Majolica	-	-	5,389	20	9,465	14,874
Ailsa Mellon Bruce	-	-	36,117	2,471	-	38,588
Gainsborough (Water Colors)	-	-	59,154	-	7,580	66,734
Face of the Gods	-	-	10,000	-	-	10,000
Dulwich Drawings	-	-	15,255	-	-	15,255
All Others	35,452	1,717	873	34,140	104,238	176,420
Totals	$153,845	$407,415	$1,366,842	$357,377	$772,851	$3,058,330

*Other--Includes expenses such as insurance, opening dinners and other costs.

NATIONAL GALLERY OF ART
FISCAL YEAR 1983
SOURCE AND APPLICATION OF SPECIAL EXHIBITION FUNDS

	Application of Funds (By Type of Expense)					
Source of Funds	Travel	Packing & Transportation	Services, Fees & Install.	Supplies	Other	Total
Federal Funds	$ 49,434	$124,491	$ 846,883	$334,289	$ -	$1,355,097
Non-Federal Funds	104,411	282,924	519,959	23,088	772,851	1,703,233
Totals	$153,845	$407,415	$1,366,842	$357,377	$772,851	$3,058,330

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NATIONAL GALLERY OF ART
SPECIAL EXHIBITION SCHEDULE
ACTUAL OBLIGATIONS FOR FISCAL YEAR 1982

Special Exhibition	Travel	Packing & Transportation	Services, Fees & Install.	Supplies	Other*	Total
El Greco	$ 11,815	$ 704	$ 157,288	$ 45,931	$ 89,217	$ 304,955
Mauritshuis	80	33,038	42,579	29,514	47,977	153,188
Rodin	3,063	98,320	50,929	7,319	83,813	243,444
Bellows	766	7,143	26,152	8,486	12,925	55,472
David Smith	251	590	37,578	12,290	1,359	52,068
Rosenwald Collection	154	320	12,707	9,819	1,601	24,601
Manet & Modern Paris	-	-	50,325	12,517	6,930	69,772
Peru	675	527	6,916	2,975	46	11,139
Vision 19th Cent. France	17,756	-	721	361	-	18,838
Claude Lorrain	-	-	11,950	672	-	12,622
Thyssen 20th Century	2,570	504	86,021	11,281	-	100,376
Majolica	98	-	98,783	26,933	28,340	154,154
Pre-Columbian Treasures	808	-	42,150	22,633	1,517	67,108
Painting in Naples	3,178	158	114,398	87,607	17,723	223,064
Neuman Picasso	16,335	-	80	2,222	580	19,217
Gans	-	8,398	149	930	7,158	16,635
Chanler	(972)	13,608	(1,972)	3,389	7,635	21,688
Kongo Art of Two Worlds	530	-	14,372	14,923	4,724	34,179
Calo Exchange	1,197	18,102	581	1,210	12,950	34,040
Kandinsky Improvisation	105	11,779	268	-	21,375	33,527
Picasso - The Bull	1,693	12,036	597	-	5,673	19,999
Sculpture & Decorative Arts	-	-	10,256	2,021	-	12,277
Prints and Drawings	-	-	290,034	-	-	290,034
All Others	-	-	145,587	24,110	-	169,697
	57,238	3,248	26,111	61,558	(3,340)	144,815
Totals	$117,340	$208,475	$1,224,560	$388,701	$347,803	$2,286,879

*Other--Includes expenses such as insurance, security, inspection and other costs.

NATIONAL GALLERY OF ART
FISCAL YEAR 1982
SOURCE AND APPLICATION OF SPECIAL EXHIBITION FUNDS

	Application of Funds (By Type of Expense)					
Source of Funds	Travel	Packing & Transportation	Services, Fees & Install.	Supplies	Other*	Total
Federal Funds	$ 57,655	$213,163	$1,167,299	$380,283	$ -	$1,818,410
Non-Federal Funds	59,675	(4,688)	57,261	8,418	347,803	468,469
Totals	$117,340	$208,475	$1,224,560	$388,701	$347,803	$2,286,879

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NATIONAL GALLERY OF ART
SPECIAL EXHIBITION SCHEDULE
ACTUAL OBLIGATIONS FOR FISCAL YEAR 1981

Special Exhibition	Travel	Packing & Transportation	Services, Fees & Install.	Supplies	Other*	Total
Picasso Salvanques	$ 1,636	$ 17,951	$ 74,455	$ 24,167	$ 22,713	$ 140,922
Dutch History Painting	4,826	1,271	9,873	9,354	1,042	26,366
Alexander, Search for	3,976	11,893	35,122	63,834	93,069	207,894
Rodin	16,199	145,603	448,772	183,032	147,891	941,497
Post Impressionism	16,039	105,117	18,667	670	29,185	169,698
Kandinsky Improvisation	1,906	20,061	9,072	8,138	23,247	62,424
Morton Neuman	2,201	16,092	1,126	464	13,937	33,820
Baldung Prints & Drawings	1,684	858	45,522	9,959	552	58,775
Cone Collection	3,383	23,769	94,500	42,181	993	164,826
Kongo Art of 2 Worlds	5,428	14,917	28,867	42,594	14,426	106,232
Oslo Exchange	1,660	6,854	244	-	4,053	12,831
Contemporary American Prints	-	202	8,557	10,695	565	20,019
Palladio Drawings	2,310	9,589	46,326	41,125	421	99,771
Pre-Columbian Treasures	4,834	-	145,596	10,263	-	160,693
Rouen Museum	-	-	37	26,908	37	27,002
Oceania	785	5,839	13,435	46	5,876	25,981
Romanian Gold	14,980	-	-	3,578	-	18,558
Rosenwald Collection	-	-	27,277	-	-	27,277
English Country House	13,652	-	31	-	31	13,714
Cubist Prints	-	-	12,500	-	-	12,500
All Others	18,487	3,902	118,498	6,299	12,813	159,999
Totals	$114,226	$383,918	$1,138,477	$483,307	$370,871	$2,490,799

*Other--Includes expenses such as insurance, security, inspection and other costs.

NATIONAL GALLERY OF ART
FISCAL YEAR 1981
SOURCE AND APPLICATION OF SPECIAL EXHIBITION FUNDS

	Application of Funds (By Type of Expense)					
Source of Funds	Travel	Packing & Transportation	Services, Fees & Install.	Supplies	Other*	Total
Federal Funds	$ 27,716	$164,373	$1,034,751	$472,368	$ -	$1,699,208
Non-Federal Funds	86,510	219,545	103,726	10,939	370,817	791,591
Totals	$114,226	$383,918	$1,138,477	$483,307	$370,871	$2,490,799

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NATIONAL GALLERY OF ART
SPECIAL EXHIBITION SCHEDULE
ACTUAL OBLIGATIONS FOR FISCAL YEAR 1980

Special Exhibition	Travel	Packing & Transportation	Services, Fees & Install.	Supplies	Other*	Total
Safavid	$ 935	$ -	$ 73,850	$ 5,130	$ 88	$ 80,023
Thyssen-Bornemisza	-	10,652	122,787	22,201	3,464	159,104
American Light	2,688	78,445	76,760	90,517	40,851	289,261
Rodin	-	-	-	-	-	-
Italian 19th Century	204	6,899	12,000	240	6,314	25,857
European Terracotta Sculptures	-	-	18,046	19,812	-	37,858
In Praise of America	3,569	31,230	80,106	72,271	5,203	192,379
Alexander, Search for	41,832	1,904	228,629	49,833	747	322,945
Rosenwald Coll	5	6,891	18,738	-	-	25,634
Oceania	7,550	68,380	6,210	5,151	33,511	120,802
Post Impressionism	37,643	132,060	366,998	72,678	179,077	788,456
Neumann Coll	7,933	113	57,374	29,645	39	95,104
Dutch History	173	240	239,573	16,147	4	256,137
Italian Draw (Chicago	-	2,366	2,703	-	-	5,069
Busch-Reisinger	-	-	35,179	2,608	4,603	42,390
All Others	24,924	23,265	19,679	51,334	26,946	146,148
Est. Total Requirements	$127,476	$362,445	$1,358,632	$437,567	$301,047	$2,587,167

*Other--Includes expenses such as insurance, security, inspection and other costs.

NATIONAL GALLERY OF ART
FISCAL YEAR 1980
SOURCE AND APPLICATION OF SPECIAL EXHIBITION FUNDS

	Application of Funds (By Type of Expense)					
Source of Funds	Travel	Packing & Transportation	Services, Fees & Install.	Supplies	Other*	Total
Federal Funds	$ 43,858	$153,451	$1,229,225	$435,633	$ -	$1,862,167
Non-Federal Funds	83,618	208,994	129,407	1,934	301,047	725,000
Totals	$127,476	$362,445	$1,358,632	$437,567	$301,047	$2,587,167

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NATIONAL GALLERY OF ART
SUMMARY STATUS OF FUNDS FOR SPECIAL EXHIBITIONS
FOR THE PERIOD BEGINNING WITH FISCAL YEAR 1980 THROUGH FISCAL YEAR 1988

	1980 (Actual) Amount	%	1981 (Actual) Amount	%	1982 (Actual) Amount	%	1983 (Actual) Amount	%	1984 (Actual) Amount	%	1985 (Actual) Amount	%	1986 (Est.) Amount	%	1987 (Est.) Amount	%	Totals Amount	%
I. Funds Available - Beginning of Year:																		
1. Corporate Donors	$ 334,000	100%	$ 216,000	29%	$ 145,000	14%	$ 380,000	21%	$ 96,000	6%	$ 931,000	32%	$2,245,000	37%	$2,367,000	73%	$ 334,000	100%
2. Trust Funds/Contingency	-	-	530,000	71	894,000	86	1,441,000	79	1,472,000	94	1,952,000	68	-	-	-	-	-	-
3. Subtotal	334,000	100	746,000	100	1,039,000	100	1,821,000	100	1,568,000	100	2,883,000	100	2,245,000	37	2,367,000	73	334,000	100
4. Federal	-	-	-	-	-	-	-	-	-	-	-	-	3,792,000	63	855,000	27	-	-
5. Subtotal-Funds Carried Forward	334,000	100	746,000	100	1,039,000	100	1,821,000	100	1,568,000	100	2,883,000	100	6,037,000	100	3,222,000	100	334,000	100
II. Add: Funds Received During the Year:																		
6. Corporate Donors	392,000	20	721,000	26	711,000	23	1,040,000	37	863,000	34	3,195,000**	65	2,350,000*	54	1,755,000	42	11,427,000	38
7. Trust Funds/Contingency	769,000	40	374,000	14	332,000	10	383,000	14	70,000	3	-	-	-	-	-	-	1,928,000	6
8. Subtotal	1,161,000	60	1,095,000	40	1,043,000	33	1,423,000	51	933,000	37	3,195,000	65	2,350,000	54	1,755,000	42	13,354,000	44
**9. Federal 1/	1,062,000	64	1,699,000	61	2,119,000	67	1,360,000	49	1,610,000	63	1,743,000	35	2,080,000	46	2,420,000	58	16,513,000	55
10. Subtotal-Funds Received	2,223,000	100	2,794,000	100	3,162,000	100	2,783,000	100	2,543,000	100	4,938,000	100	4,430,000	100	4,175,000	100	29,867,000	100
III. Total Funds Available:																		
11. Corporate Donors	926,000	28	937,000	27	856,000	21	1,420,000	31	959,000	23	4,126,000	46	4,595,000	55	4,122,000	56	11,761,000	39
12. Trust Funds/Contingency	769,000	23	904,000	26	1,226,000	31	1,824,000	40	1,542,000	37	-	-	-	-	-	-	6,265,000	21
13. Subtotal	1,695,000	51	1,841,000	53	2,082,000	52	3,244,000	71	2,501,000	60	4,126,000	46	4,595,000	55	4,122,000	56	18,026,000	60
14. Federal	1,062,000	32	1,699,000	47	1,912,000	48	1,360,000	29	1,610,000	40	4,743,000	54	3,792,000	45	2,275,000	44	16,513,000	55
15. Subtotal-Total Funds Available	2,757,000	100	3,540,000	100	3,994,000	100	4,604,000	100	4,111,000	100	8,869,000	100	8,387,000	100	6,397,000	100	34,539,000	100
IV. Less: Funds Expended During the Year:																		
16. Corporate Donors	710,000	39	792,000	32	468,000	20	1,332,000	44	8,000	-	1,981,000	38	2,428,000	44	1,600,000	39	9,439,000	34
17. Trust Funds/Contingency	14,000	-	-	-	-	-	321,000	11	979,000	41	616,000	12	-	-	-	-	1,930,000	7
18. Subtotal	724,000	28	792,000	32	468,000	20	1,653,000	55	987,000	41	2,597,000	50	2,428,000	44	1,600,000	39	11,369,000	41
19. Federal	1,062,000	72	1,699,000	68	2,119,000	80	1,360,000	45	1,610,000	59	2,231,000	50	3,043,000	56	2,778,000	61	16,513,000	59
20. Subtotal-Total Expenditures	1,786,000	100	2,491,000	100	2,587,000	100	3,013,000	100	2,597,000	100	4,828,000	100	5,471,000	100	4,378,000	100	27,882,000	100
V. Funds Available-End of Year:																		
21. Corporate Donors	216,000	29	145,000	14	388,000	21	88,000	6	951,000	52	2,145,000	37	2,167,000	73	2,522,000	82	2,322,000	82
22. Trust Funds/Contingency	530,000	71	890,000	86	1,441,000	79	1,503,000	94	563,000	31	1,336,000	23	-	-	-	-	4,335,000	153
23. Subtotal	746,000	100	1,049,000	100	1,829,000	100	1,591,000	100	1,514,000	83	3,481,000	60	2,167,000	73	2,522,000	82	6,657,000	235
24. Federal	-	-	-	-	-	-	-	-	307,000	17	1,560,000	27	799,000	27	550,000	18	550,000	19
25. Subtotal-Funds Available, End of Year	$ 746,000	100%	$1,049,000	100%	$1,829,000	100%	$1,591,000	100%	$1,821,000	100%	$5,041,000	100%	$2,966,000	100%	$3,072,000	100%	$7,207,000	254%

* Includes $750,000 from a major corporate sponsor for the Treasures Houses of Britain Exhibition.
** Federal appropriations for Special Exhibitions were one-year funds through FY 1983, and beginning with fiscal 1984 these funds are now no-year appropriations which remain available until expended.
1/ Includes recoveries from prior years of $31,000.

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FUNCTION B
OPERATION AND MAINTENANCE OF BUILDINGS AND GROUNDS

Introduction

This function comprises the responsibility for the operation and maintenance of all Gallery structures and surrounding grounds. The staff operates and maintains: approximately 1,121,000 square feet of floor space; approximately 355,000 sq. ft. of landscaped grounds; 70,902 sq. ft. of glass rails and window walls; 1,102 electrical motors; 5,225 light fixtures; 61 restrooms with 369 toilet fixtures; 61 air handling systems; and the various electrical systems within the building. In addition, this staff maintains all outside grounds and all horticultural and planting arrangements in both buildings. All operating systems are covered 24 hours a day every calendar day of the year. All building spaces are cleaned and maintained daily throughout the year while the grounds are maintained throughout the year. Preventive maintenance is given to all equipment. Daily maintenance and care of the buildings and grounds is essential to ensure public safety.

Included in the responsibilities of this function is the completion of the repair, renovation, and restoration of the Gallery's West Building. Please refer to Tab 5A -- West Building Repair, Renovation and Restoration Program -- for a discussion of this program.

A total of 213 full-time permanent positions have been established for the operation and maintenance of the buildings and grounds. For FY 1987 the overall ceiling limitation by OMB results in an estimated 183 full-time equivalent (FTE) employment for this function.

FY 1987 Request

A total of $13,851,000 is requested in FY 1987 for the operation and maintenance of the National Gallery of Art. This request represents a decrease of $406,000 below the FY 1986 budget for this function. The comparative budgets for FY 1986 and FY 1987 are displayed in the following table:

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NATIONAL GALLERY OF ART
FISCAL YEAR 1987 BUDGET
SUMMARY OF INCREASES AND (DECREASES)
OPERATIONS AND MAINTENANCE
FUNCTION B

OBJECT CLASS	FY 1986	FY 1987	FY 1987 Over/(Under) FY 1986
Personnel Compensation	$ 4,745,000	$ 4,871,000	$ 126,000
Personnel Benefits	582,000	597,000	15,000
Subtotal Compensation and Benefits	5,327,000	5,468,000	141,000
Travel of Persons	-	-	-
Transportation of Things	10,000	11,000	1,000
Rent, Communications & Utilities	4,444,000	4,746,000	302,000
Printing & Reproduction	-	-	-
Other Services	313,000	313,000	-
Supplies & Materials	753,000	783,000	30,000
Equipment	130,000	130,000	-
Land & Structures	-	-	-
Salaries and Expenses	10,977,000	11,451,000	474,000
Repairs, Restoration and Renovation	3,280,000	2,400,000	(880,000)
Total	$14,257,000	$13,851,000	$(406,000)
Budget after Sequestering Salaries and Expenses	$10,503,000		
Repairs, Restoration and Renovation	$ 3,139,000		

1. Personnel Compensation and Benefits--Increase of $141,000.

This increase will be applied as follows:

Item	Amount
Mandatory within-grade promotions and wage-board step increases	$ 85,000
Recalculate pay for 2,080 hours	17,000
Increase of 2 FTE employment workyears for full-time permanent positions as noted below	39,000
Totals	$141,000

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a. Position for Operating Engineers Staff ($26,500)

Position	Grade	Annual Salary
Operating Engineer	WG-10	$23,000
Basic Salary		23,000
Personnel Benefits		3,000
Total Salary & Benefits		$26,000

Additional operating engineers are required to accomplish the additional regular and preventive maintenance on the various A-C systems. Since more stringent environmental controls have been established for the purpose of protecting the various works of art, it has become necessary to operate additional A-C systems 24 hours a day. This has imposed a heavier load on the equipment and a consequent increase in the required maintenance.

b. Position for Night Labor Staff ($13,000)

Position	Grade	Annual Salary
Laborer (Night)	WG-1	$12,000
Basic salary		12,000
Personnel Benefits		1,000
Total Salary & Benefits		$13,000

By FY 1986, ten additional galleries will have been completed -- eight in the north-east wing and two in the south-west wing -- with a total area of approximately 10,000 square feet. These are wood floors which must be dusted, vacuumed and buffed every night, six nights a week. This requires additional Night Laborers.

2. Transportation of Things -- Increase of $1,000.

A total of $21,000 is requested in FY 1987 for the transportation of materials, supplies and equipment. This amount represents an increase of $1,000 over the budgeted level in the current year for the increased costs of transporting materials, supplies, and equipment.

3. Rent, Communications, and Utilities -- Increase of $302,000.

A total of $4,746,000 is requested in FY 1987 for steam and electricity costs for the Gallery buildings. This amount represents an increase of $302,000 above the FY 1986 budgeted level. The increase in steam and electricity costs for the FY 1978-1987 period is displayed on pages 5-5 and 5-6.

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4. Supplies and Materials -- Increase of $30,000.

A total of $783,000 is requested for supplies and materials costs in FY 1987, an increase of $30,000 above the FY 1986 budget level. The component increases are as follows:

Description	1986 Budget	1987 Request	FY 1987 Increase Over FY 1986
Building Operation.....	$250,000	$260,000	$ 10,000
Grounds Maintenance.....	46,000	46,000	-
Repair of Buildings and Fixed Equipment.....	425,000	445,000	20,000
All Others.....	32,000	32,000	-
	$753,000	$783,000	$ 30,000

5. Lands and Structures -- Decrease of ($880,000).

A total of $2,400,000 is requested in FY 1987 for the West Building Renovation program compared to $3,280,000 budgeted in FY 1986, a decrease of $900,000. Please refer to Tab 5A for a full discussion of the program.

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NATIONAL GALLERY OF ART
SUMMARY OF ELECTRICITY USAGE
FOR THE FISCAL YEARS 1978-1987

Description	1978 Actual	1979 Actual	1980 Actual	1981 Actual	1982 Actual	1983 Actual	1984 Actual	1985 Actual	1986 Budget	1987 Estimate	Estimated 1987 Increase
Total Cost.....	$ 1,271,000	$ 1,348,000	$ 1,807,000	$ 1,919,000	$ 2,019,000	$ 2,187,000	$ 2,272,000	$ 2,682,000	$ 2,719,000	$ 2,933,000	$ 214,000
Annual rate of increase over prior year.....	-	6.1%	34.1%	6.1%	5.3%	8.3%	3.9%	18.0%	1.4%	7.9%	
Cumulative annual rate of increase over FY 1978.....	-	6.1%	42.2%	50.1%	58.9%	72.1%	78.8%	111.0%	113.9%	130.9%	
Usage (in Kilowatt Hrs.)	30,037,000	33,149,000	37,497,000	36,140,000	37,189,000	39,463,000	41,808,000	43,455,000	45,000,000	46,000,000	
Annual rate of increase over prior year.....	-	10.4%	13.1%	(3.6%)	2.9%	6.1%	5.4%	4.4%	3.6%	2.2%	
Cumulative annual rate of increase over FY 1978.....	-	10.4%	24.8%	20.3%	23.8%	31.4%	38.5%	44.7%	49.8%	53.1%	
Rate (Cost per K.W.H.)	$ .04231	$ .04066	$ .04819	$ .05307	$ .05429	$ .05542	$ .05460	$ .06171	$ .06042	$ .06380	
Annual rate of increase over prior year.....	-	(3.9%)	18.5%	10.1%	2.3%	2.1%	(1.5%)	13.0%	(2.1%)	5.6%	
Cumulative annual rate of increase over FY 1978.....	-	3.9%	13.9%	25.4%	28.3%	31.0%	29.0%	45.9%	42.8%	50.8%	

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NATIONAL GALLERY OF ART
CONSIST OF STEAM HEAT
FOR THE FISCAL YEARS 1978-1987

Description	1978 Actual	1979 Actual	1980 Actual	1981 Actual	1982 Actual	1983 Actual	1984 Actual	1985 Actual	1986 Budget	1987 Estimate	Estimated 1987 Increase
Total Cost.....	$1,052,000	$1,088,000	$1,380,000	$1,696,000	$1,771,000	$1,539,000	$1,618,000	$1,733,000	$1,725,000	$1,811,000	$86,000
Annual rate of increase over prior year.....	-	3.4%	26.8%	22.9%	4.4%	(13.1%)	5.1%	7.1%	(.5%)	5.0%	
Cumulative annual rate of increase over FY 1978.....	-	3.4%	31.2%	61.2%	68.3%	46.3%	53.8%	64.7%	64.0%	72.1%	
Usage (in lbs.).....	129,813,000	122,388,000	124,356,000	118,500,000	124,973,000	105,110,000	100,992,000	108,887,000	117,000,000	130,500,000	
Annual rate of increase over prior year.....	-	(5.7%)	1.6%	(4.7%)	5.5%	(15.8%)	(4.7%)	8.2%	7.5%	3.0%	
Cumulative annual rate of increase over FY 1978.....	-	(5.7%)	(4.2%)	(8.7%)	(3.7%)	(18.7%)	(22.5%)	(16.1%)	(9.9%)	(7.2%)	
Rate (Cost per 1,000 lbs.)	$8.10	$8.88	$11.10	$14.31	$14.17	$14.58	$16.09	$15.91	$14.74	$15.03	
Annual rate of increase over prior year.....	-	9.6%	25.0%	28.9%	(1.0%)	2.3%	10.4%	(1.1%)	(7.4%)	2.0%	
Cumulative annual rate of increase over FY 1978.....	-	9.6%	37.0%	76.7%	74.9%	80.0%	98.6%	96.4%	82.0%	85.6%	

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NATIONAL GALLERY OF ART

Repair, Restoration and Renovation of Buildings

Background

The National Gallery is currently in the fourth phase of a construction and improvements program that began with the completion of the original West Building in 1941. The growth of the Gallery's art collections and the broadening of its overall program over the years have necessitated both new construction and needed improvements to existing facilities. The eventuality of such a need for future expansion was anticipated in the 1937 Joint Resolution of Congress establishing the National Gallery, as evidenced by the setting aside by Congress of a plot of land for this purpose. This land was utilized for the construction of the East Building and the Connecting Link, completed in 1978. The construction of these facilities was known as Phases I, II and III, while the major renovation program for the West Building is referred to as Phase IV. A summary of the costs follows:

	Federal Funds	Non-Federal Funds	Totals
Phase I-III (1938 - 1979)	$ 5,679,000	$113,919,000	$119,598,000
Phase IV (1980 - 1988)	20,886,000	9,284,000	30,170,000
TOTALS	$26,565,000	$123,203,000	$149,768,000

Phase IV - Modernization of the West Building: 1980-1988

Principal objectives of Phase IV have been to construct the new 19th Century public galleries, install additional fireproofing, replace/upgrade wiring and electrical systems, the replacement of forty year-old air conditioning (HVAC) systems, remove asbestos, modify lighting, expand smoke detection systems, construct ground level sales shops and the Garden Cafe, and provide ground level access throughout the East and West Buildings.

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A Study of Energy Management Techniques to Reduce Energy Consumption has been prepared for the Gallery with its goal being a recommended program which will reduce operating costs.

Included in the overall master plan for the National Gallery of Art is the development of exterior garden display areas for works of sculpture. The first increment of this plan is the recently completed transformation of the North Terrace and Sculpture Pool area of the East Building into a beautifully landscaped court displaying three major works of sculpture by Henry Moore.

Another increment of this plan is based on a longstanding signed agreement between the National Gallery of Art and the Department of Interior to jointly develop and construct the National Sculpture Garden on the Mall area adjacent to the west end of the Gallery's West Building and to the south of the National Archives. In anticipation of a possible gift of sculpture and in conjunction with the Gallery's National Lending Service, design work has been started for the completion of the National Sculpture Garden.

The authority for the federal funding of this work is contained in the Joint Resolution of Congress of March 24, 1937 (20 U S.C. 71-75) and also included in the annual appropriation language dealing with the "maintenance, alteration, improvement, and repair of buildings, approaches, and grounds....".

Federal Funding of West Building Renovation, FY 1982 - FY 1987

This comprehensive renovation program was presented to OMB and the Congress in 1981 and annual incremental funding began in fiscal 1982. Between 1982 and 1986, appropriations towards this program amounted to $18,886,000. In 1987 we are seeking $2,400,000 towards the completion of Phase IV and the continued repairs, restoration and renovation of the Gallery buildings.

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REPAIR, RESTORATION AND RENOVATION OF BUILDINGS
FEDERAL FUNDS - $8,031,000
PROGRAM DESCRIPTION OF FUNDING
FISCAL 1986 - 1987

A description of the renovation planned in FY 1986 and subsequent years follows. The Phased Development Plan diagrams of the ground level (page 5-17) and main level (page 5-18) are coded to agree with the narrative.

The Renovation Program for 1986 and 1987 will provide the following:

A. Continued remodeling for the better utilization of existing space.

B. Development of the work environment for NGA employees by continued removal of toxic PCB from transformers and encapsulation of asbestos.

C. Provision for the new National Sculpture Garden.

D. Provision for needed planned comprehensive repairs as well as unscheduled emergency repairs.

E. Implementation of a comprehensive energy management system to reduce energy usage and costs.

F. Continued installation of new lighting systems in public galleries.

The estimated funding breakdown for the above items for the fiscal years 1986 and 1987 is as follows:

	1986	1987
A. Remodel	$ 450,000	$ 600,000
B. Environment	359,000	340,000
C. National Sculpture Garden	2,000,000	1,000,000
D. General Repairs	522,000	260,000
E. Energy Management	1,800,000	200,000
F. Lighting	500,000	-
Total	$5,631,000	$2,400,000
Source of Funding:		
Carried Forward	$2,351,000	$ -
Budget Year	3,280,000	2,400,000
Total	$5,631,000	$2,400,000

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Details of the Fiscal 1986 program

A. Remodel

1. Galleries for Educational Exhibits (Ground Floor - West Building)

The program calls for the renovation of five large rooms, in a former office area, to provide exhibition space for displays of an educational nature and to serve as an introduction to art techniques and concepts.

2. Galleries

Completion of the Sculpture Gallery complex, ground floor. The 1982 program provides for the completion of the most urgently needed galleries for the display of the National Gallery's sculpture collection, but does not provide space for the display of all the important works in the extensive collections. The renovation of five rooms formerly used as offices will make such a display possible.

B. Environment

1. Transformers in W.B.

The transformers, located in the West Building basement contain P.C.B. - a proven carcinogenic. The P.C.B. must be removed by a contractor licensed to handle toxic materials. The material is not a hazard unless a transformer fails. Since failures have occurred in the past, the hazardous materials is being removed.

2. Asbestos

The building equipment built in the 1940's has insulation containing asbestos. Procedures for encapsulation have begun and will continue until completed in 1987.

C. National Sculpture Garden

The National Gallery has a longstanding signed agreement with the Department of the Interior to jointly develop and construct a garden for outdoor display of sculpture in the area immediately adjoining the Gallery's West Building across from the National Archives, designated the National Sculpture Garden.

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The Gallery is negotiating with a major collector of sculpture who is interested in presenting us with a collection of the work of the artist who is widely considered to be the greatest living sculptor in the world today, Henry Moore. The value of the gift at today's prices is in excess of $13 million.

The collection includes many of the artist's greatest monumental scale works. For their proper presentation, they will require considerable landscaping, which has always been envisioned to complete the development of that tract as a sculpture garden. (Phase I, the pool convertible to ice-skating in the winter and the double row of linden trees has already been provided at federal expense; in addition, it is intended to develop a food service facility on the site which should contribute to the liveliness and amenity of this important piece of land.)

The donor is also keenly interested in the National Gallery's National Lending Service; many of the smaller pieces and even some of the larger will be made available for loans across the country on a rotating basis.

In order to provide suitable settings and security for these works of art, the construction and landscaping is estimated to cost about $3 million. In addition, the matter of annual maintenance costs should also be addressed. A summary of associated costs follows:

Summary of Estimated Funding for National Sculpture Garden:

I. Non-Federal Funds

Donor gift of sculpture collection:	$13.0 - $30.0 million

II. Federal Funds

Capital Construction: Basic construction/ landscaping (No-year funds)	$3,000,000
Initial Transportation and Installation Ten large sculptures @ $25,000 (One-year funds)	$ 250,000

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II. Federal Funds (Cont.)

Estimated Annual Maintenance and Security Costs		
Conservation		
2 large pieces @ $10,000	= $ 20,000	
8 large pieces - approx. 50 days @ $900	= 45,000	
35 small sculptures @ $570	= 20,000	
Subtotal - Conservation	$ 85,000	
Relocation/movement of 5 large pieces per year (10 x $5,900)	59,000	
Relocation/movement of 12 small pieces (24 x $1,500)	36,000	
Grounds maintenance @ $5,000 per year	5,000	
Five guards for outside security @ $13,000/year	65,000	
Total Estimated Annual Conservation/ Maintenance/Security (One-year funds)	$250,000	$ 250,000

In consideration of this munificent gift, which seems destined to be located on the Mall in Washington in competition with some keenly interested other suitors, it seems appropriate that Federal funds were provided for the construction/landscaping of the basic Sculpture Garden, as was done in the case of the Smithsonian Institution Sculpture Garden located on the south side of the Mall just across from the proposed National Sculpture Garden.

The donor's name would not be attached to the designation "National Sculpture Garden." As works of sufficiently high quality by other artists become available, they could be added to the collection of sculpture on display in the garden and/or shown throughout the United States via the Gallery's National Lending Service.

Note: Design Study - An architectural and engineering (A&E) design study may be undertaken in fiscal 1986. It is estimated that $100,000 would be required for the study, and that it could be financed from funds available in the renovation program.

D. Comprehensive General Repairs

1. The original roof of the West Building is and will be in need of repair for a number of years. A program to replace sections as warranted is planned.

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2. There is a leak around the skylights on the Fourth Street Plaza. Extensive paving must be removed to install new waterproofing.

3. Several fans on the AC systems are deteriorating badly and must be replaced.

4. Establish and implement an ongoing program to replace worn out carpet in the East Building.

E. Energy Management

1. At present the NGA does not have a system of energy management, i.e., an effective way to save energy costs by reducing operating time of equipment or implementing other energy saving features. A study of Energy Management Techniques to Reduce Energy Consumption has been prepared for the Gallery with its goal being a recommended program which will reduce operating costs.

F. New Lighting Program

1. A number of old galleries use very high wattage lighting. It is planned to install new lighting systems to provide better lighting at lower operating cost.

Details of the Fiscal 1987 Program

The proposed program for 1987 is a continuation of the 1986 program with the following additions.

A. Remodel

1. School Group Reception and Handicapped Elevator

Construction of school group reception/orientation rooms, a docents' room, and an elevator for the handicapped. These are needed to provide adequate reception facilities for the newly activated Seventh Street Entrance, which will be used especially by school groups, requiring rooms for assembly, instruction and demonstrations in connection with gallery tours.

Such rooms would also permit broader implementation of the immensely successful pilot project of providing art materials and facilities on a limited basis for art workshops conducted by our volunteer docents for school children following their tours of the galleries.

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2. Continue East Building basement renovations under the auditorium including installation of supplementary ductwork to improve the HVAC systems in the public galleries, and provide additional storage space and/or other tenant improvements.

Establishment of Separate No-Year "Repair, Restoration and Renovation of Buildings" Account

As a result of the experience gained since 1980 in the renovation of the West Building, an examination of all of the facilities of the Gallery has lead to a review of both the one-year "Lands and Structures" object class as well as the no-year "Repair, Renovation and Restoration Program of the Original West Building" object class.

As discussed during our last Congressional hearings, originally this renovation and repair concept was limited to the West Building. However, now that we have been in the East Building for seven years, we see the need for renovation and repair of all of our facilities, including the East Building and Concourse Connecting Link.

The best utilization of space for the Gallery dictates one comprehensive plan for all of our facilities and grounds. Therefore, it has been agreed that the concept of repair, restoration and renovation be expanded to include all of the buildings, grounds and facilities of the Gallery.

The approved Continuing Resolution, P.L. 99-190, for fiscal 1986 contains a new no-year account which will provide funds for restoration and renovation projects "of buildings owned or occupied by the National Gallery of Art."

As a result of this change in our fiscal 1986 appropriation, all one-year funds in the "Lands and Structures" object class have been transferred into the new all-inclusive no-year "Repair, Restoration and Renovation of Buildings" account as follows:

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Description	Fiscal 1986	Fiscal 1987
One-Year Lands & Structures	$ 400,000	$ 400,000
No-Year West Building Repair & Renovation	2,900,000	2,000,000
Total No-Year "Repair, Restoration and Renovation" Account	3,300,000	2,400,000
Reduction of .6% in FY 86	(20,000)	-
	$3,280,000	$2,400,000

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Excerpt - Senate Transcript, March 22, 1984

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COOPERATIVE AGREEMENT BETWEEN THE DEPARTMENT OF THE INTERIOR AND THE NATIONAL GALLERY OF ART RELATING TO THE ESTABLISHMENT, CARE, CUSTODY, MAINTENANCE, AND PROTECTION OF THE NATIONAL SCULPTURE GARDEN IN L'ENFANT SQUARE, WASHINGTON, D.C.

THIS AGREEMENT, made and entered into this 2d day of May, 1966, by and between the Department of the Interior, represented by the Secretary of the Interior, hereinafter referred to as the "Secretary," and the National Gallery of Art, hereinafter referred to as "Gallery";

WITNESSETH:

WHEREAS, the report of the President's Council on Pennsylvania Avenue suggested the creation of a Sculpture Garden by the Gallery on the Mall between the Gallery and the Museum of Natural History, known as L'Enfant Square; and

WHEREAS, the Secretary has authorized the National Park Service to construct for a design for the development of the Mall including a proposed Sculpture Garden; and

WHEREAS, it is the intention of the Secretary that this Garden be developed in collaboration with the Gallery; and

WHEREAS, the Gallery has advised the Secretary of its desire to cooperate fully in the development of park lands in the Mall in the area of L'Enfant Square; and

WHEREAS, the parties signatory hereto desire that work be begun as soon as possible looking toward the completion of this project; and

WHEREAS, in order to achieve this objective, it is essential that there be a delineation of the areas of responsibility with respect to the activity of the parties signatory hereto;

NOW THEREFORE, in consideration of the mutual promises and agreements contained herein, subject to the availability of funds, the parties hereto agree as follows:

1. The Secretary, through the National Park Service and at its expense, will be responsible for—

(a) The construction, landscaping, lighting (both display and ambulatory), policing, maintenance, and security of the Sculpture Garden and for the security of the works of art therein; and

(b) The installation and erection of the sculpture in the Garden (including, without limiting the generality of the foregoing, all work necessary or required for this purpose, such as the pouring of foundations) with the right in the Gallery to supervise this activity to the extent of erecting the works of art.

With respect to the landscaping, designing, and the display lighting, the views of the Gallery with respect thereto are to be solicited and considered. The Secretary shall have final authority in the areas as to the foregoing, but decisions pertaining thereto will be made by him only after first obtaining the recommendations of the Gallery in regard to plans with respect to landscaping, designing, and display lighting.

2. The Gallery at its expense will be responsible for acquiring the sculpture to be displayed in the Garden, its physical care, maintenance, and labeling, and such educational programs with respect to such works of art as the Gallery may ultimately determine. The Gallery will have the final decision for the selection of the sculpture to be located in the Garden. To assist the Gallery in this undertaking, an Advisory Selection Committee, constituted as set forth below, may make recommendations to the Gallery for its consideration with respect to the sculpture to be installed. This Committee will consist of the Director of the National Gallery of Art, as Chairman; and

The Secretary of the Interior or his designee;
The Secretary of the Smithsonian Institution or his designee;
The Chairman of the Fine Arts Commission or his designee; and
The Chairman of the National Council on the Arts or his designee.

3. It is jointly understood and agreed that unless otherwise required by Congressional legislation there will be no subsurface parking under the National Sculpture Garden on L'Enfant Square after its creation.

4. The Gallery shall retain all right, title, and interest in and to any and all works of art installed and erected in the Sculpture Garden, and such installation and erection shall not in any way vest in the Department of the Interior, its Bureaus or Services,

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any right, title, or interest in said works of art. The Gallery shall have the right at any time to remove any work of art from the Sculpture Garden for the purpose of maintenance, repair, replacement, or substitution.

IN WITNESS WHEREOF, the parties hereto have subscribed their seals the day, month, and year aforesaid.

The Department of the Interior:

STEWART L. UDALL, *Secretary.*

The National Gallery of Art:

PAUL MELLON, *President.*

Attest:

HARRY R. PFEIFLER, *Secretary.*

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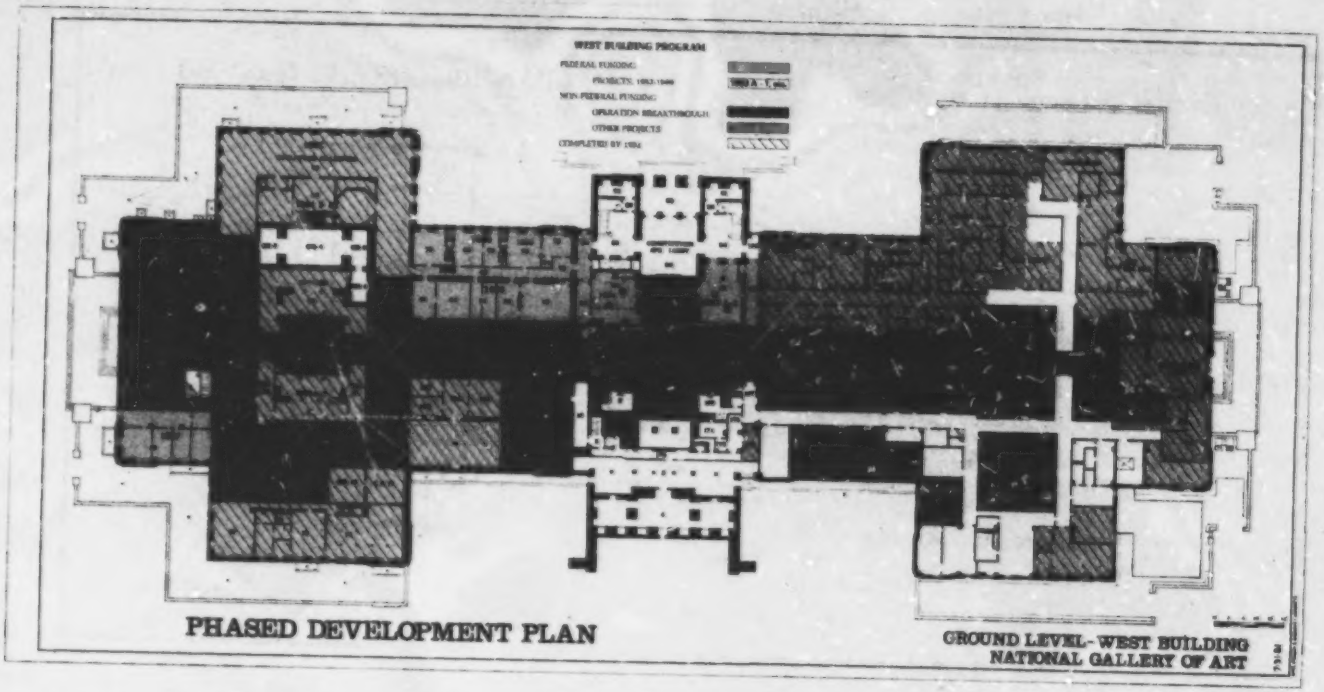

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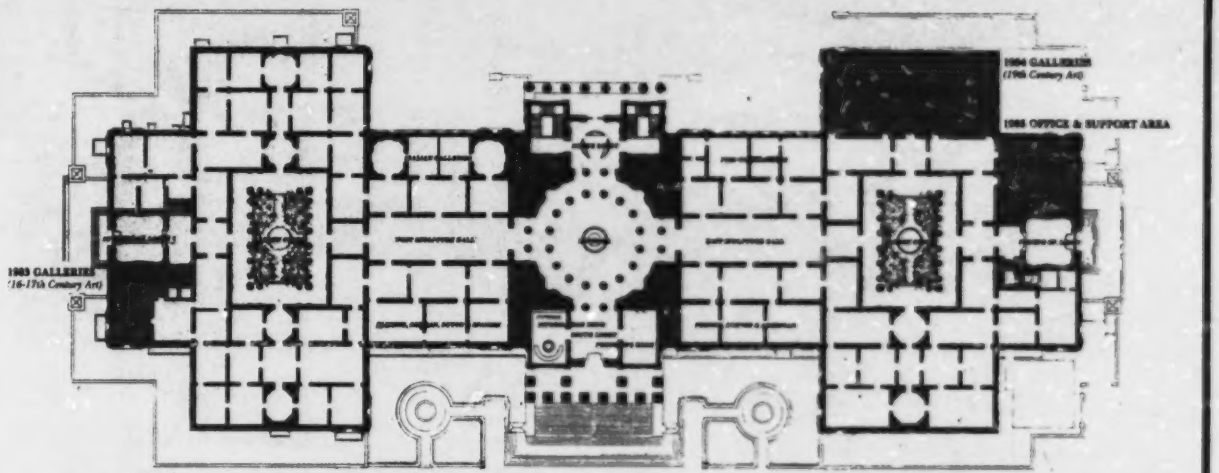

PHASED DEVELOPMENT PLAN

MAIN LEVEL - WEST BUILDING
NATIONAL GALLERY OF ART

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FUNCTION C
PROTECTION OF BUILDINGS, GROUNDS AND CONTENTS

Introduction

This function involves protecting the Gallery's buildings, grounds and contents from vandalism and theft. To provide adequate protection it is necessary that a guard be located so that all visitors and works of art in the exhibition areas be within their view at all times. All other positions are determined by the number of entrances to the buildings, reliefs, special requirements, necessary patrols and manning requirements for the electronic security console.

A total of 310 full-time permanent positions have been established to provide for proper security for the buildings, grounds and contents. For FY 1987 the overall ceiling limitation by OMB, which includes summer evening hours part-time employment, results in an estimated 312 full-time equivalent (FTE) employment for this function.

FY 1987 Request

A total of $6,638,000 is requested in FY 1987 for the protection of the Gallery's buildings, grounds and contents. This request represents a decrease of $121,000 below the budgeted FY 1986 level of funding. The comparative budget levels for FY 1986 and FY 1987 are displayed in the following table:

NATIONAL GALLERY OF ART
FISCAL YEAR 1987 BUDGET
SUMMARY OF INCREASES AND (DECREASES)
PROTECTION OF BUILDINGS GROUNDS & CONTENTS
FUNCTION C

OBJECT CLASS	FY 1986	FY 1987	FY 1987 Over/(Under) FY 1986
Personnel Compensation	$5,858,000	$5,734,000	$ (124,000)
Personnel Benefits	685,000	683,000	(2,000)
Subtotal Compensation & Benefits	6,543,000	6,417,000	(126,000)
Travel of Persons	-	-	-
Transportation of Things	-	-	-
Rent Communications & Utilities	-	-	-
Printing & Reproduction	-	-	-
Other Services	46,000	46,000	-
Supplies & Materials	94,000	99,000	5,000
Equipment	76,000	76,000	-
Land & Structures	-	-	-
Total	$6,759,000	$6,638,000	$(121,000)
Budget after Sequestering	$6,465,000		

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1. Personnel Compensation and Benefits--Decrease of ($126,000). This decrease will be applied as follows:

Item	Amount
Mandatory within-grade promotions and wage-board step increases	$ 63,000
Recalculate pay for 2,080 hours	20,000
Elimination of funding for 12 temporary FTE employment workyears and overtime for Treasure House of Britain Exhibition	(250,000)
Restore reduction of base pay in FY 1986 budget for security guards	41,000
Total	($126,000)

For the galleries, it is necessary that a guard be so located that all visitors and works of art in the exhibition areas be within their view at all times. All other positions are determined on the basis of entrances to the buildings, reliefs, specialized duties, manning of the security console and patrols.

In accordance with the above requirement, guard positions are determined as follows:

Required days of duty per year per guard			260
Less: Number of days off -- Annual leave		21	
sick leave		9	
Average number of excused holidays		3	33
Average number of days of duty per guard			227

$$\frac{\text{Days Gallery open to public during year}}{\text{Average number of days of duty per guard}} = \frac{363}{227} = 1.60 \text{ Staff - year required per guard post}$$

2. Supplies and Materials -- Increase of $5,000.

Supplies and materials will require an estimated $99,000 in FY 1987, a $5,000 increase above the budgeted level for FY 1986. The component change is for additional guard uniforms.

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FUNCTION D
GENERAL ADMINISTRATION

Introduction

This function consolidates the activities of the Administrator, Treasurer, and Secretary-General Counsel. The Administrator is responsible for the operations, maintenance and security of the Gallery's buildings and grounds and the accountability for procurement of all supplies, materials, and equipment needed for the operations of the Gallery; recruitment and enhancement of the Gallery's staff; centralized mail, file, and duplicating operations; first aid and telephone services; public checkroom services and the Publications sales facility. The Secretary and General Counsel provides legal support and competent professional advice to the Gallery management as well as direct support for the Board of Trustees and its committees. The office is also charged with general overview of the Gallery's Development program. The Treasurer is responsible for the proper control of all of the Gallery's financial resources in accordance with applicable legislation, by-laws and regulations, as well as the maintenance of proper books, records, and financial reports in accordance with generally accepted accounting principles.

A total of 88 full-time permanent positions have been established to provide proper staffing for the general administration functions. For FY 1987 the overall ceiling limitation by OMB results in an estimated 78 full-time equivalent (FTE) employment for this function.

FY 1987 Request

Funding of $4,345,000 is requested in FY 1987 to provide for necessary expenses of the offices of the Administrator, the Secretary-General Counsel, and the Treasurer. This request represents an increase of $33,000 above the budgeted amount of FY 1986. The comparative budgets for FY 1986 and FY 1987 are displayed by object class in the following table:

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NATIONAL GALLERY OF ART
FISCAL YEAR 1987 BUDGET
SUMMARY OF INCREASES AND (DECREASES)
GENERAL ADMINISTRATION
FUNCTION D

OBJECT CLASS	FY 1986	FY 1987	FY 1987 Over (Under) FY 1986
Personnel Compensation	$2,152,000	$2,187,000	$ 35,000
Personnel Benefits	422,000	420,000	(2,000)
Subtotal Compensation and Benefits	2,574,000	2,607,000	33,000
Travel of Persons	11,000	11,000	-
Transportation of Things	40,000	40,000	-
Rent Communications and Utilities	684,000	807,000	123,000
Printing and Reproduction	-	-	-
Other Services	811,000	688,000	(123,000)
Supplies and Materials	119,000	119,000	-
Equipment	73,000	73,000	-
Land and Structures	-	-	-
TOTAL	$4,312,000	$4,345,000	$ 33,000
Budget after Sequestering	$4,133,000		

1. Personnel Compensation and Benefits--Increase of $33,000.

This increase will be applied as follows:

Item	Amount
Mandatory within-grade promotions and wage-board step increases.....	$25,000
Recalculate pay for 2080 hours.....	8,000
Totals.....	$33,000

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2. Rent, Communications, and Utilities -- Increase of $123,000.

A total of $807,000 is estimated to be needed in FY 1987 for rentals and communications, an increase of $123,000 over the current year requirement.

Postage, telephone and telegraph will require an increase of $114,000. An increase of $92,000 is requested in telephone and telegraph as a result of usage and/or rate increases, such as, increased cost due to divestiture. The primary component increase is $83,000 for increased costs of FTS Intercity Telephone Service per GSA planning. An increase of $22,000 is needed in postage due to increases in costs and usage of first class mail. Finally, structural rental (SLUC) will increase $5,000 and other equipment rental will increase $4,000.

3. Other Services -- Decrease of ($123,000).

A total of $688,000 is required at the Current Policy level for other services costs in FY 1987, a decrease of $149,000 below the current year budget. Data processing services costs will decrease by $129,000. The decrease is attributable to lesser on-site computer services cost as development efforts on the implementation of an integrated financial management information system decreases. Most of these funds are transferred to Function A for emphasis on the Art Information System. The cost of the Treasury payroll system will increase $6,000.

See Tab 7A for a full discussion of the National Gallery's EDP program.

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NATIONAL GALLERY OF ART
INFORMATION SYSTEMS PROGRAM

BACKGROUND AND INTRODUCTION

The National Gallery's Data Processing Department currently has three major information systems development projects underway. The development of computer based systems in support of Function A - the Care and Utilization of the Art Collections, in support of Function D - General Administration and the development of those information systems that support multiple functions within the Gallery.

I. Function A - The Care and Utilization of Art Collections

Anticipating the installation of the new IBM 4300 series processor in the Fall of 1982, one of the first development efforts undertaken by the Data Processing Department was to install a new Art Collections Management System.

Since Museum Collection Management systems and their requirements are rather unique to the museum world and the availability of existing systems very limited, the Gallery decided to develop its Collections Management System in-house. A task force was formed consisting of personnel from the Data Processing Department and numerous Curatorial Offices, to design this system.

Prior to the installation of the IBM processor, the Gallery had a rudimentary Art Object Inventory and Art Insurance System running on an NCR Mini Computer. It was decided to substantially redesign these two applications and install the new versions on the IBM equipment.

As a starting point this task force used an Art Information System Design document which was produced earlier in 1982. With this document as a basis for development, the task force produced a new design document, gained Gallery Executive Officer approval and proceeded to develop and install the new NGA Art Information System. The intention was to produce a basic system which would perform only those functions vital to Collections Management and to do this as quickly as possible. This approach allowed the Gallery to convert over to the IBM equipment and remove one of its older NCR processors. The system was designed to be modular allowing for additional enhancements and features to be easily incorporated after the initial system was implemented. The first release of the NGA Art Information System was put into production on July 1, 1983. Since that time additions and enhancements have been made to the system. The following is a list of the modules which currently exist in the Art Information System:

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- Artist System
- Art Object System
- Art Object Location Processing System
- Art Object Location History System
- Art Object Financial Processing System
- Art Object Financial History System
- Art Loan and Insurance System
- Art Patron Information System
- Authority File Maintenance System
- Index Card and Label Processing System

Currently these systems are available to authorized users via on-line terminals located throughout the Gallery's East and West Buildings. Reports are produced on a per call basis by the Data Processing Department. Today the NGA Art Information System is capable of producing some forty-five different reports.

Although data on the Gallery's entire Collections has not yet been entered into the NGA Art Information System Databases the curatorial staff is working in that direction and it is hoped that the majority of the Gallery's holdings will be entered within the next year. Paintings, sculpture, drawings and decorative arts have been entered and the prints are in process. Library books are not included in the IBM system database due to their specialized nature but are catalogued into a nationalized library network system (OCLC/RLIN).

An NGA Art Information System users group has been established and they meet on a periodic basis to evaluate and recommend further enhancements to the system. These requirements are scheduled according to need and priority and then incorporated into the system as a part of the normal maintenance function.

II. Function D - General Administration

At present the Gallery's financial records are maintained on a 1970's era NCR Mini Computer. Today this system houses the following applications:

- Three general ledger systems - one for each source of Gallery funds: Federal, Trust and Publications sales
- two accounts payable systems - Federal and Non-Federal
- a payroll system for Gallery Non-Federal employees
- a Publications (sales) point-of-sale and inventory system
- an accounts receivable and cash receipts system for Publications sales

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- a Federal Budget reporting system, and
- a Non-Federal project budget and cost reporting system

Input to these applications is manually prepared by the user departments and data entered by the Data Processing staff. The data is then processed on the NCR Mini Computer and output reports are produced and distributed to the end users.

Since these financial applications are relatively out-of-date, do not inter-communicate and the amount of data to be processed exceeds the limits of both the software and the processor, the Gallery found it necessary to convert its financial applications over to a larger processor. This financial planning effort began in the Summer of 1983 at the same time data on the Gallery's Art Collections was being entered into the new IBM 4300 series processor.

The major elements of the plan were the development of a Financial Requirements Definition Study, and a Financial Systems Implementation Plan. Next was to develop an RFP which was issued in November 1983 for a new Federal General Ledger, Accounts Payable and Budgetary Control systems. The vendor responses were received, a contract awarded and the new software packages were purchased in May 1984 through the GSA schedule. Data Processing and Accounting personnel are now in the process of implementing this package to be operational with the beginning of fiscal year 1986. The Federal general ledger will be converted as of October 1, 1985 to the new software with the Trust and Publications general ledgers being converted in subsequent years.

III. Office Automation Supporting Multiple Functions Within the Gallery

The concept of Office Automation was introduced to the Gallery in the Fall of 1981. A study was conducted of stand-alone and shared resource word processing systems. This study included vendor consultation, equipment demonstrations, and submitting to vendors actual Gallery applications to see how their equipment handled and processed the information.

As a result of this study the IBM stand-alone Displaywriter was selected to satisfy the Office Automation need of the Gallery for two reasons: first, compared with the equipment of other vendors examined, the Displaywriter met the most criteria of the Gallery's needs; and secondly, in foreseeing future Gallery data/word processing requirements, the Displaywriter seemed the most viable equipment for the eventual integration of Gallery applications.

Presently fifty-six Displaywriter workstations are installed throughout the Gallery accomplishing such tasks as document composition, document revision, and records management.

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There are several Displaywriters equipped to communicate with other Displaywriters within the Gallery, off-site in New York City and London, England. One Displaywriter is directly connected to the 4300 Mainframe Computer to access the Art Information System database.

The Gallery's Center for Advanced Study in the Visual Arts (CASVA) was the first department to address the need for a shared resource word processing system. In February, 1984 a study was conducted of their office systems requirements.

The conclusion, documented in the CASVA Office Automation Study, was to procure and install a system that had the capability to share information stored in a central location with enough terminals to accommodate the growing number of CASVA's visiting scholars. The IBM 5520 Administrative System was procured in the Summer of 1984 to satisfy the requirements addressed in this study.

Currently, there are twenty-four active terminals installed throughout the CASVA offices, three 5219 Printers, and one 6670 Information Distributor, a high-speed laser printer.

The 5520 Administrative System has solved one monumental problem but on a much smaller scale, the IBM Personal Computer is viewed as an Office Systems workstation that could, eventually, serve as a tri-function terminal: a word processor; a 3270 terminal used to access host applications on the 4300 Mainframe Computer; and as an application specific terminal to employ such software packages as spreadsheets, statistical analysis, graphics or data base management.

The Gallery procured the first PC in June, 1984; to date there are nine PC's installed throughout the Gallery. Three are in the Accounting Department, and one in Data Processing. Other PC's are located in the Conservation Department, the External Affairs Officer's Development Office, the Education Auditorium, the Getty Museum Prototype Project Office, and one in Baltimore which transmits information on a daily basis to the 5520 Administrative System. The PC located in the Getty Museum Prototype Project Office employs the Electronic Mail Package ON-TIME to communicate with eight American museums and several museums abroad. The Accounting Department transmits the Gallery's Federal monthly disbursements and receives monthly balances from the Treasury Department. Two PC's are currently being tested with a communications package to the IBM 4300.

With the Office Systems equipment in place, issues such as connectivity and integration arose. The ultimate goal addressed was the communications needed for all the various types of IBM equipment to share information.

In February, 1985 the National Gallery of Art embarked on another Office Systems Planning Study, this time conducted

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jointly with IBM. The reason for this involvement is that the Gallery's policy, to date, has been to standardize equipment whenever possible to facilitate compatibility and maximize connectivity. The purpose of the study was two-fold: first to conduct an analysis of the Office Automation tools currently in use at the NGA to determine how these tools continue to meet, or no longer meet, the daily requirements of the NGA staff; and, secondly, to examine how available IBM tools, if implemented, might enhance these daily requirements and meet the newer, more sophisticated automation demands of the NGA.

The immediate objectives, short-range and long-range goals are documented in the Office Systems Planning Study: Analysis and Recommendations issued in May, 1985. Identified in this document are those areas of office automation that need further exploration to improve productivity and communications, and cost effective solutions. These recommendations are considered moving targets, rather than permanent commitments, to be updated on an ongoing basis reflecting changes to user requirements, additional user needs, as well as technological developments.

In brief, the recommendations set forth in this study are for the Gallery to:

- No longer purchase IBM Displaywriter equipment; instead, the Gallery should procure IBM Personal Computers which have proven to be more versatile and flexible in the office environment.
- Standardize all existing Displaywriter workstations to use the same word processing software, and upgrade the Displaywriter printers to 60 characters per second.
- Lease additional terminals to be used with the 5520 Administrative System.
- Establish the document distribution network on the 5520 Administrative System.
- Research the concept of Local Area Networking; and implement using existing Personal Computers installed throughout the Gallery.
- Define those Displaywriter users that need access to the 4300 Mainframe Computer and procure and install the 3270 Attached Workstation communications feature on those displays.
- Investigate two software packages that could be installed on the 4300 Mainframe Computer: DISOSS, IBM's Distributed Office Systems package, and PROFS, IBM's Professional Office Systems Software.

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NATIONAL GALLERY OF ART
MAJOR DATA PROCESSING OBJECTIVES
FOR FISCAL YEAR 1987

During Fiscal Year 1987, the Gallery Data Processing Department will work to continue its efforts in the conversion and development of information systems for each of the functional areas described below.

Art Systems Development

It is anticipated that once records have been created for the majority of the Gallery Art Collections, a real need will exist for the current Art Information System files to be converted over to a Relational Data Base Manager software package. At this time it is conceivable that the users in the Curatorial Departments would have the expertise to directly generate interactive queries and reports. These searches and report requests would be entered through on-line terminals and be processed interactively by the Data Base Manager.

The current NGA Art Information System is being used as a tool to initially load the curatorial records on Art Objects and to provide the users with some exposure in the use of on-line terminals by providing a limited number of predetermined queries. Today with the files being incomplete and with the users just now becoming familiar with the day-to-day use of computer terminals, a Data Base Manager would not be cost effective. In the near future, however, when the data bases are complete and the users trained, this package with on-line queries and report generation would eliminate the need for the in-house programming staff to develop customized reports and queries in response to users requests. Providing the users with these features and capabilities reduces the development cost for in-house system maintenance and customized report writing and frees up analysts and programmers to perform more cost effective tasks.

In the early part of fiscal year 1986, the Gallery will be testing this concept by using a subset of its Art Collection loaded on a Personal Computer and a Data Base Manager for the PC. This experiment is a part of a prototype project sponsored by the J. Paul Getty Trust.

If these efforts are successful, the Gallery would like to begin the solicitation and procurement process for a Data Base Manager to be installed on the IBM 4300 Mainframe. The Gallery's data sharing needs and the size of the Art Collections preclude the use of a PC for this Data Base Manager. As shown on the Long Range Art Systems Implementation Plan on page 7-19 the Gallery hopes to develop an RFP for the procurement of this Data Base Manager in Fiscal Year 1986, with the selection and award to follow in Fiscal Year 1987.

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Financial Systems Development

As shown on the Gallery's Long Range Financial Systems Implementation Plan appearing on page 7-20 of this document, the Gallery Data Processing Department anticipates three information systems development efforts in Fiscal Year 1987.

First by Fiscal Year 1987 two of the three General Ledgers (Federal and Trust) will have been converted over to the IBM Mainframe and running the Gallery's new Budgetary Control, General Ledger, and Accounts Payable software systems. The third and final general ledger, Publications Fund, will be converted to the new accounting software during Fiscal Year 1987. This will complete the general ledger conversion effort and provide the Gallery with consolidated financial reporting capabilities for the General Ledgers.

After the Publications Fund's general ledger has been converted, the Data Processing Financial Analysts will begin the requirements definition and analyses to select a fixed assets software package which will suit the needs of the Gallery. Obviously this package will need to interface with the Gallery's existing general ledger package as well as accommodate the needs of both Federal and non-Federal fixed assets reporting.

It is anticipated that this fixed assets package would be selected and installed in Fiscal Year 1987. It's also planned to begin loading the Gallery's fixed assets into this system during the same time period.

If time and funds permit, the Gallery would also like to select and procure a software package to be used by the Gallery's Federal Budget Officer for Budget Forecasting and Modeling. Here again this package would be required to interface with the new Budgetary Control and General Ledger systems operating on the IBM Mainframe. This effort would commence after the fixed assets software was implemented and operational.

Office Systems Equipment

As mentioned earlier, in February, 1985 the Data Processing Department in conjunction with IBM performed an Office Systems Planning Study. As shown on the Gallery's Long Range Office Systems Implementation Plan, appearing on page 7-21 of this document, the Gallery anticipates to design and implement three communications networks utilizing equipment already installed throughout the Gallery.

The first of these is the document distribution network on the 5520 Administrative System so that information can easily be transmitted between users. This will also include Displaywriters equipped with communications features to interact with this network.

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The second network involves the Gallery's Personal Computers. It is intended to design and implement a Local Area Network so that PC's can send and receive documents, electronically transmit messages, and share printers.

The third communications endeavor is to equip several Displaywriters with the necessary features to access the 4300 Mainframe Computer.

Once these communications networks are in place and operational plans will be made to connect all remaining Office Systems equipment.

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NATIONAL GALLERY OF ART
LONG RANGE ART SYSTEMS IMPLEMENTATION PLAN

FISCAL YEAR 1985	FISCAL YEAR 1986	FISCAL YEAR 1987	FISCAL YEAR 1988	FISCAL YEAR 1989
o Create Print Tape for typesetting European Paintings' Summary Catalogue	o Perform Requirements Definition for Data Base Manager Software Package for Art Related Systems	o Issue RFP for Art Data Base Manager System	o Establish content definitions and relational indices for Art Data Base Manager	o Create Print Tape for typesetting American Paintings
o Install terminals at Gallery Information Desks	o Develop RFP for solicitation of Data Base Manager Software Package for Art Related Systems	o Select and procure Data Base Manager Software Package	o Load Art Data Bases from existing Art Inventory files	o Continue to develop and establish Art Related Data Bases
o Enter Drawings Records into Object Inventory System	o Complete entering Print Records into Object Inventory System	o Implement Data Base Manager System Software Package	o Install Data Base user terminals as required	o Install Data Base user terminals as required
o Begin to enter Print Records into Object Inventory System	o Continue to enter Index of American Design Records into Object Inventory	o Continue to enter Index of American Design Records into Object Inventory System	o Train Curatorial staff on use of new Data Base Manager System	o Train Curatorial staff on use of new Data Base Manager System
o Begin to enter Index of American Design Records into Object Inventory	o Enhance and maintain current Art Information System software as required	o Maintain current Art Information System software as required	o Maintain Art Data Base Manager software and data bases	o Maintain Art Data Base Manager software and data bases
o Complete entering records for American Paintings, Decorative Arts and Sculpture				
o Enhance and maintain current Art Information System software as required				

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NATIONAL GALLERY OF ART
LONG RANGE FINANCIAL SYSTEMS IMPLEMENTATION PLAN

FISCAL YEAR 1985	FISCAL YEAR 1986	FISCAL YEAR 1987	FISCAL YEAR 1988	FISCAL YEAR 1989
o Install and customize MSA financial software packages on IBM processor - Budgetary Control - General Ledger - Accounts Payable	o Implement Trust General Ledger on MSA System 1/	o Implement Publications General Ledger on MSA System 1/	o Perform requirements analysis and install Accounts Receivable package	o Select and install Publications Sales/ Inventory hardware and software
o Implement Federal General Ledger on MSA System 1/	o Begin conversion of Publications General Ledger	o Select and install Fixed Assets package on IBM System	o Perform requirements analysis and install Purchase Order Management package	o Select and install a Non-Federal Payroll Package
o Begin conversion of Trust General Ledger	o Feasibility Study on Non-Federal Payroll Package	o Select and install Budget Forecasting package on IBM System	o Begin requirements analysis for Publications Sales/Inventory System 2/	
o Begin Federal Budget preparation efforts using MSA PC LINK and LOTUS 1-2-3 software packages on IBM PC's				
Budget Authority $320,000	$585,000	$430,000	$447,000	$464,000
Outlays $333,000	$564,000	$443,000	$445,000	$463,000

1/ MSA General Ledger System includes producing standard accounting reports, e.g., balance sheets, activity statements, source and application funds and cost reports.

2/ If this effort were to be performed by an outside contractor, this task could begin as early as this year.

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NATIONAL GALLERY OF ART
LONG RANGE OFFICE SYSTEMS IMPLEMENTATION PLAN

FISCAL YEAR 1985	FISCAL YEAR 1986	FISCAL YEAR 1987	FISCAL YEAR 1988	FISCAL YEAR 1989
o Establish communications between Special Exhibitions Displaywriter and Displaywriter located in London, England	o Research 5520 Administrative System Document Distribution network	o Purchase Displaywriters remaining on IBM's Federal Lease to Ownership Plan (FLTOP)	o Install second Local Area Network with remaining PC's	o Implement all decisions for either the addition of a second IBM centralized Word Processing System or software for the 4300 Mainframe Computer
o Establish communications between Personal Computer in Baltimore, Md. and 5520 Administrative System	o Install five additional terminals and one printer on the 5520 Administrative System	o Standardize all Display-workstations to use the same word processing software	o Install additional terminals and second high speed laser printer to be used with the 5520 Administrative System	o Have remaining Office Systems equipment communicating
o Establish communications between Displaywriter and 5520 Administrative System	o Research Local Area Networking (LAN) for Personal Computers and document recommendations and strategy for implementation in 1987	o Upgrade remaining Displaywriter printers to 60 characters per second	o Implement additional document distribution network on 5520 Administrative System to include all terminals	
o Establish communications between 5520 Administrative System and 4300 Mainframe Computer	o Research additional software packages for the 4300 Mainframe Computer for implementation of applications, such as Document Distribution, Electronic Mail, Information Search & Retrieval using Displaywriters	o Install first Local Area Network using existing PC's	o Re-evaluate documentation and strategies for decision, implementation, and installation of either new IBM centralized Word Processing System or software packages for the 4300 Mainframe Computer	
o Conduct Office Systems Planning Study with IBM		o Design and install 5520 Administrative System Document Distribution network		

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NATIONAL GALLERY OF ART
COMPARATIVE SUMMARY OF ON-SITE/OFF-SITE
EDP COSTS

The Gallery's EDP costs for fiscal years 1986 and 1987 are summarized below showing costs for services performed on-site and those performed off-site by contractors for the benefit of the Gallery.

	1986	1987	1987 OVER (UNDER) 1986
ON-SITE EDP SERVICES:			
In-house Computer (Art)	$ 219,000	$ 330,000	$111,000
In-house Computer (Admin.)	559,000	430,000	(129,000)
Conversion/Systems/Programming Services	69,000	60,000	(9,000)
Supplies/Software Packages	10,000	10,000	-
SUBTOTAL ON-SITE EDP COSTS	857,000	830,000	(27,000)
Word Processing Equipment:			
In-house Word Processing Equipment	135,000	103,000	(32,000)
SUBTOTAL ON-SITE EDP COSTS	992,000	933,000	(59,000)
OFF-SITE EDP SERVICES:			
FED-LINK, OCLC, RLIN, DIALOG			
Library Contract Computer Services	176,000	260,000	84,000
Development Contract Computer Services	21,000	21,000	-
DPA AVATAR Computer Services	10,000	10,000	-
U.S. Treasury Department Contract For TPIS Federal Payroll			
TPIS Terminal Maintenance	16,000	16,000	-
TPIS Computer Processing	100,000	106,000	6,000
SUBTOTAL OFF-SITE EDP COSTS	323,000	413,000	90,000
TOTAL EDP BUDGET	$1,315,000	$1,346,000	$ 31,000

The standard functional presentation of the EDP budget request is presented on the following pages.

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NATIONAL GALLERY OF ART
COMPARATIVE SUMMARY OF FEDERAL EDP COSTS
FISCAL YEARS 1986 AND 1987

DESCRIPTION	1986	1987	1987 OVER (UNDER) 1986
Function A			
Services - In-House	$ 219,000	$ 330,000	$111,000
Services - Outside	69,000	60,000	(9,000)
Services - OCLC/RLIN/DIALOG	21,000	285,000	99,000
2523 - Subtotal - Services	495,000	675,000	201,000
2621 - Supplies	-	-	-
3119 - Equipment/Software	-	300,000	300,000
Subtotal - Function A	495,000	975,000	501,000
Function D			
2521 - Services - TPIS Maint.	16,000	16,000	-
2521 - Services - TPIS Processing	100,000	106,000	6,000
2523 - Services - In-House	559,000	430,000	(129,000)
2621 - Supplies	10,000	10,000	-
Subtotal - Function D	685,000	562,000	(123,000)
2331 - Word Processing Equip.	135,000	103,000	(32,000)
TOTAL EDP BUDGET	$1,315,000	$1,346,000	$ 31,000

Function A - Care and Use of Art

Services

In-house computer services shows a projected increase of $111,000 over fiscal year 1986 which is accounted for by the shift of Gallery Data Processing support from Function D activities over to Function A. As stated in the preceding narrative, the Gallery hopes to purchase and install a Data Base Management System software package in fiscal year 1987 to support ongoing art programs. The implementation of this package will require additional support from in-house data processing personnel. Overall the combined total for in-house computer services for both Function A and D shows a net decrease of $44,000 for fiscal year 1987.

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Function D - General Administrative

Services

In-house computer services shows a decrease of $155,000 due to the shift of efforts from Function D to Function A.

Word Processing Equipment

The line for word processing equipment includes the cost for equipment rental and maintenance, the purchase of new equipment, supplies and software. In fiscal year 1987 the Gallery expects the cost for equipment rental and maintenance to be $103,000 and the costs to purchase new equipment, supplies and software to be $82,000. This shows a decrease of $46,000 over fiscal year 1986. This decrease is accounted for by the payout of leased word processing equipment under the Federal Lease to Ownership Plan (FLTOP).

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PROGRAM AND PERFORMANCE

1. Management and Operation. -- The National Gallery of Art receives, holds, and administers works of art acquired for the Nation by the Gallery's board of trustees; maintains and administers the Gallery's buildings to provide maximum care and protection to art treasures and permit these works of art to be exhibited regularly to the public without charge. Number of visitors:

1985 actual - 5,080,000
1986 estimate - 5,500,000
1987 estimate - 5,000,000

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STANDARD FORM 304
Mar. 1960, Bureau of the Budget
Circular No. A-11, Revised
304-105

NATIONAL GALLERY OF ART
SALARIES AND EXPENSES

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code 33-0200-0-1-503		1985 actual	1986 estimate	1987 estimate
	Personnel compensation:			
11.1	Permanent positions	15,067	16,332	16,881
11.3	Positions other than permanent	877	691	559
11.5	Other personnel compensation	1,143	1,720	1,624
11.8	Special personal services payments			
	Total personnel compensation	17,087	18,743	19,064
	Personnel benefits:			
12.1	Civilian	2,202	2,460	2,509
13.0	Benefits for former personnel			
21.0	Travel and transportation of persons	89	150	161
22.0	Transportation of things	245	712	1,088
23.0	Rent, communications, and utilities	5,388	5,265	5,659
24.0	Printing and reproduction	223	214	224
25.0	Other services	3,600	2,663	3,352
26.0	Supplies and materials	2,415	2,347	2,168
31.0	Equipment	844	840	740
32.0	Lands and structures	1,723	2,351	-
33.0	Investments and loans			
41.0	Grants, subsidies, and contributions			
42.0	Insurance claims and indemnities			
43.0	Interest and dividends			
44.0	Refunds			
99.0	Total obligations	33,816	36,745	34,965

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STANDARD FORM 300
July 1951, Bureau of the Budget
Circular No. A-11, Revised

NATIONAL GALLERY OF ART
SALARIES AND EXPENSES
PERSONNEL SUMMARY

Identification code 33-0200-0-1-503	FY 85 actual	FY 86 estimate	FY 87 estimate
Total number of full-time permanent positions	823	823	823
Total compensable workyears			
Full-time equivalent employment	750	801	801
Full-time equivalent of overtime and holiday hours	37	55	49
Average GS grade	6.67	6.61	6.61
Average GS salary	$21,605	$21,325	$21,542
Average salary of ungraded position	$22,417	$22,916	$23,318

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Offset each 24.0 | Offset each 0 | Offset each 0 | Offset each 4.0

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STANDARD FORM 300

NATIONAL GALLERY OF ART
SALARIES AND EXPENSES
Program and Financing
(in thousands of dollars)

Identification code 33-0200-0-1-503	85 actual	86 estimate	87 estimate
Program by activities:			
10.00 Total obligations.....	33,816	36,745	34,965
Financing:			
17.00 Recovery of prior year obligations.....	-49	-	-
21.40 Unobligated balance available, start of year.....	-972	-4,050	-856
24.40 Unobligated balance available, end of year.	4,050	856*	498*
25.00 Unobligated balance lapsing.....	3	-	-
39.00 Budget authority.....	36,848	33,551	34,607
Budget authority:			
40.00 Appropriation.....	36,848	33,754	34,607
40.00 Reduction pursuant to Public Law 99-190.....	-	-203	-
43.00 Appropriation (adjusted)	36,848	33,551	34,607
Relation of obligations to outlays:			
71.00 Obligations incurred, net.....	33,816	36,745	34,965
72.40 Obligated balance, start of year.....	6,648	4,469	3,527
74.40 Obligated balance, end of year.....	-4,469	-3,527	-3,584
77.00 Adjustments in expired accounts.....	-183	-	-
78.00 Adjustments in unexpired accounts.....	-49	-	-
90.00 Outlays, excluding pay raise supplemental.....	35,763	37,687	34,908
*Carry forward of Special Exhibition Funds			8-4

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STANDARD FORM 300

NATIONAL GALLERY OF ART
Repair, Restoration and Renovation of Buildings
Program and Financing
(in thousands of dollars)

Identification code 33-0201-0-1-503	FY 85 actual	FY 86 estimate	FY 87 estimate
Program by activities:			
10.00 Total obligations.....	-	1,949	3,351
Financing:			
21.40 Unobligated balance available, start of year.....	-	-	-1,331
24.40 Unobligated balance available, end of year.	-	1,331	380
39.00 Budget authority.....	-	3,280	2,400
Budget authority:			
40.00 Appropriation.....	-	3,300	2,400
40.00 Reduction pursuant to Public Law 99-190.....	-	-20	-
43.00 Appropriation (adjusted)	-	3,280	2,400
Relation of obligations to outlays:			
71.00 Obligations incurred, net.....	-	1,949	3,351
72.40 Obligated balance, start of year.....	-	-	1,300
74.40 Obligated balance, end of year.....	-	-1,300	-1,111
90.00 Outlays, excluding pay raise supplemental.....	-	649	3,540

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STANDARD FORM 300

NATIONAL GALLERY OF ART
Repair, Restoration and Renovation of Buildings
Object Classification (in thousands of dollars)

Identification code 33-0201-0-1-503	FY 85	FY 86	FY 87
25.0 Other Services	-	400	200
32.0 Lands and Structures	-	1,549	3,151
99.0 Total Obligations	-	1,949	3,351

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[illegible] 300

NATIONAL GALLERY OF ART
Reduction Pursuant to Public Law 99-177
Salaries and Expenses
Program and Financing (in thousands of dollars)

[illegible] 11-0200-0-1-503	[illegible] 85	[illegible] 86	[illegible] 87
Program by activities:			
10.00 Total obligations.....		-1,443	-
Financing:			
40.00 Budget authority.....		-1,443	-
Relation of obligations to outlays:			
71.00 Obligations incurred, net.....		-1,443	-
72.40 Obligated balance, start of year.....		-	-12
74.40 Obligated balance, end of year.....		12	-
90.00 Outlays.....		-1,431	-12
SUMMARY OF BUDGET AUTHORITY AND OUTLAYS:			
Enacted/requested:			
Budget authority.....		33,551	34,607
Outlays.....		37,687	34,908
Reductions pursuant to P.L. 99-177:			
Budget authority.....		-1,443	-
Outlays.....		-1,431	-12
Total:			
Budget authority.....		32,108	34,607
Outlays.....		36,256	34,896

These reductions are required by the Balanced Budget and Emergency Deficit Control Act of 1985 (Public Law 99-177).

STANDARD FORM 300

NATIONAL GALLERY OF ART
Reduction Pursuant to Public Law 99-177
Repair, Restoration and Renovation of Buildings
Program and Financing (in thousands of dollars)

Identification code 33-0201-0-1-503	1985	1986	1987
Program by activities:			
10.00 Total obligations.....		-141	-
Financing:			
40.00 Budget authority.....		-141	-
Relation of obligations to outlays:			
71.00 Obligations incurred, net.....		-141	-
72.40 Obligated balance, start of year.....		-	-113
74.40 Obligated balance, end of year.....		113	-
90.00 Outlays.....		-28	-113

These reductions are required by the Balanced Budget and Emergency Deficit Control Act of 1985 (Public Law 99-177).

SUMMARY OF BUDGET AUTHORITY AND OUTLAYS:			
Enacted/requested:			
Budget authority.....		3,280	2,400
Outlays.....		649	3,540
Reductions pursuant to P.L. 99-177:			
Budget authority.....		-141	-
Outlays.....		-28	-113
Total:			
Budget authority.....		3,139	2,400
Outlays.....		621	3,427

NATIONAL GALLERY OF ART
STATEMENT OF ACTIVITY
FOR THE FISCAL YEAR ENDED SEPTEMBER 30, 1978

	Non-Federal Funds				Total
	Trust Funds	Publications Fund	Total Non-Federal	Federal Funds	Combined Funding
Support and Revenues:					
U.S. Government Appropriation	$ -	$ -	$ -	$15,678,931	$15,678,931
Investment Income	2,353,907	148,096	2,502,003	-	2,502,003
Gain (Loss) on Security Sales	(590,284)	-	(590,284)	-	(590,284)
Gifts and Bequests	8,360,060	-	8,360,060	-	8,360,060
Publication Sales	-	1,949,953	1,949,953	-	1,949,953
Other	70,005	9,455	79,460	-	79,460
Total Support and Revenues	$10,193,688	$2,107,504	$12,301,192	$15,678,931	$27,980,123
Current Operating Expenses:					
Programs:					
Art Purchases	5,374,577	-	5,374,577	-	5,374,577
Curatorial	132,515	-	132,515	1,169,254	1,301,769
Special Exhibitions	557,983	-	557,983	925,070	1,483,053
Editorial & Photography	-	-	-	440,675	440,675
Research Services	190,905	-	190,905	548,614	739,519
Educational Services	74,814	-	74,814	862,082	936,896
Fellowships	101,477	-	101,477	-	101,477
Music	88,261	-	88,261	57,311	145,572
Publications	-	1,622,785	1,622,785	-	1,622,785
Total Program Expenses	$ 6,520,532	$1,622,785	$ 8,143,317	$ 4,003,006	$12,146,323
Administration, Operations & Security:					
Operations & Maintenance	-	-	-	5,297,883	5,297,883
Security	-	-	-	2,870,446	2,870,446
Administration, Fiscal & Legal	488,636	-	488,636	1,736,556	2,225,192
Total Administration, Operations & Security	488,636	-	488,636	9,904,885	10,393,521
Fixed Asset Expenditures:					
Furniture and Equipment	-	91,914	91,914	1,627,885	1,719,799
Building Construction and Alterations	4,260,596	-	4,260,596	143,155	4,403,751
Total Fixed Asset Expenditures	4,260,596	91,914	4,352,510	1,771,040	6,123,550
TOTAL EXPENDITURES	$11,269,764	$1,714,699	$12,984,463	$15,678,931	$28,663,394
Support and Revenues Over (Under) Expenditures	$(1,076,076)	$ 392,805	$ (683,271)	$ -	$ (683,271)

NATIONAL GALLERY OF ART
STATEMENT OF ACTIVITY
FOR THE FISCAL YEAR ENDED SEPTEMBER 30, 1979

	Non-Federal Funds				
	Trust Funds	Publications Fund	Total Non-Federal	Federal Funds	Total Combined Funding
Support and Revenues:					
U.S. Government Appropriation	$ -	$ -	$ -	$19,041,000	$19,041,000
Less: Unobligated Balance Returned to Treasury	-	-	-	(873,642)	(873,642)
Net Amount Available for Obligation	-	-	-	18,167,358	18,167,358
Investment Income	2,685,594	230,009	2,915,603	-	2,915,603
Gain (Loss) on Security Sales	(501,410)	-	(501,410)	-	(501,410)
Gifts and Bequests	5,519,591	-	5,519,591	-	5,519,591
Publication Sales	-	2,309,899	2,309,899	-	2,309,899
Other	152,968	14,430	167,398	-	167,398
Total Support and Revenues	$7,856,743	$2,554,338	$10,411,081	$18,167,358	$28,578,439
Expenditures:					
Programs:					
Art Purchases	3,777,696	-	3,777,696	-	3,777,696
Curatorial	161,202	-	161,202	1,324,488	1,485,690
Special Exhibitions	518,862	-	518,862	1,423,027	1,941,889
Editorial & Photography	-	-	-	500,336	500,336
Research Services	173,472	-	173,472	615,226	788,698
Educational Services	101,010	-	101,010	903,511	1,004,521
Fellowships	112,729	-	112,729	6,421	119,150
Music	83,209	-	83,209	55,347	138,556
Publications	-	1,901,064	1,901,064	-	1,901,064
Total Program Expenditures	$4,928,180	$1,901,064	$ 6,829,244	$ 4,828,356	$11,657,600
Administration, Operations & Security:					
Operations & Maintenance	-	-	-	6,033,437	6,033,437
Security	-	-	-	3,535,560	3,535,560
Administration, Fiscal & Legal	584,595	-	584,595	1,888,882	2,473,477
Total Administration, Operations & Security	$ 584,595	$ -	$ 584,595	$11,457,879	$12,042,474
Fixed Asset Expenditures:					
Furniture and Equipment	-	17,651	17,651	1,367,320	1,384,971
Building Construction/ Alterations	1,981,707	-	1,981,707	513,803	2,495,510
Total Fixed Asset Expenditures	$1,981,707	$ 17,651	$ 1,999,358	$ 1,881,123	$ 3,880,481
Total Expenditures	$7,494,482	$1,918,715	$ 9,413,197	$18,167,358	$27,580,555
Support and Revenues Over (Under) Expenditures	$ 362,261	$ 635,623	$ 997,884	$ -	$ 997,884

NATIONAL GALLERY OF ART
STATEMENT OF ACTIVITY
FOR THE FISCAL YEAR ENDED SEPTEMBER 30, 1980

	Non-Federal Funds				
	Trust Funds	Publications Fund	Total Non-Federal	Federal Funds	Total Combined Funding
Support and Revenues:					
U.S. Government Appropriation	$ -	$ -	$ -	$22,091,000	$22,091,000
Less: Unobligated Balance Returned to Treasury	-	-	-	(499,511)	(499,511)
Net Amount Available for Obligation	-	-	-	21,591,489	21,591,489
Investment Income	3,472,043	359,452	3,831,495	-	3,831,495
Gain (Loss) on Security Sales	-	-	-	-	-
Gifts and Bequests	5,307,747	-	5,307,747	-	5,307,747
Publication Sales	-	2,710,272	2,710,272	-	2,710,272
Other	138,023	21,399	159,422	-	159,422
Total Support and Revenues	$8,917,813	$3,091,123	$12,008,936	$21,591,489	$33,600,425
Expenditures:					
Programs:					
Art Purchases	888,268	-	888,268	-	888,268
Curatorial	223,377	-	223,377	1,564,888	1,788,265
Special Exhibitions	725,000	-	725,000	2,196,254	2,921,254
Editorial & Photography	1,837	-	1,837	501,216	503,053
Research Services	169,159	-	169,159	726,905	896,064
Educational Services	119,212	-	119,212	1,149,862	1,269,074
Fellowships	126,764	-	126,764	32,478	159,242
Music	101,378	-	101,378	64,483	165,861
Publication	-	2,504,920	2,504,920	-	2,504,920
Total Program Expenditures	$2,354,995	$2,504,920	$ 4,859,915	$ 6,236,086	$11,096,001
Administration, Operations & Security:					
Operations & Maintenance	-	-	-	7,746,841	7,746,841
Security	-	-	-	4,132,447	4,132,447
Administration, Fiscal & Legal	530,109	-	530,109	2,359,302	2,889,411
Total Administration, Operations & Security	$ 530,109	$ -	$ 530,109	$14,238,590	$14,768,699
Fixed Asset Expenditures:					
Furniture and Equipment	65,791	126,434	192,225	603,828	796,053
Building Construction/ Alterations	3,406,589	-	3,406,589	512,985	3,919,574
Total Fixed Asset Expenditures	$3,472,380	$ 126,434	$ 3,598,814	$ 1,116,813	$ 4,715,627
Total Expenditures	$6,357,484	$2,631,354	$ 8,988,838	$21,591,489	$30,580,327
Support and Revenues Over (Under) Expenditures	$2,560,329	$ 459,769	$ 3,020,098	$ -	$ 3,020,098

NATIONAL GALLERY OF ART
STATEMENT OF ACTIVITY
FOR THE FISCAL YEAR ENDED SEPTEMBER 30, 1981

	Non-Federal Funds				
	Trust Funds	Publications Fund	Total Non-Federal	Federal Funds	Total Combined Funding
Support and Revenues:					
U.S. Government Appropriation	$ -	$ -	$ -	$24,651,000	$24,651,000
Less: Unobligated Balance Returned to Treasury	-	-	-	(49,024)	(49,024)
Net Amount Available for Obligation	-	-	-	24,601,976	24,601,976
Investment Income	2,808,510	528,317	3,336,827	-	3,336,827
Gain (Loss) on Security Sales	581,248	-	581,248	-	581,248
Gifts and Bequests	4,782,303	-	4,782,303	-	4,782,303
Publication Sales	-	2,862,542	2,862,542	-	2,862,542
Other	168,968	32,651	201,619	-	201,619
Total Support and Revenues	8,341,029	3,423,510	11,764,539	24,601,976	36,366,515
Expenditures:					
Programs:					
Art Purchases	1,215,517	-	1,215,517	-	1,215,517
Curatorial	427,552	-	427,552	1,747,037	2,174,589
Special Exhibitions	761,868	-	761,868	2,187,262	2,949,130
Editorial & Photography	-	-	-	558,960	558,960
Research Services	173,098	-	173,098	995,599	1,168,697
Educational Services	341,032	-	341,032	1,421,303	1,762,335
Fellowships	95,440	-	95,440	105,348	200,788
Music	106,030	-	106,030	66,659	172,689
Publications	-	2,635,989	2,635,989	-	2,635,989
Total Program Expenditures	3,120,537	2,635,989	5,756,526	7,082,168	12,838,694
Administration, Operations & Security:					
Operations & Maintenance	-	-	-	8,710,600	8,710,600
Security	-	-	-	4,675,200	4,675,200
Administration, Fiscal & Legal	501,813	-	501,813	2,878,162	3,379,975
Total Administration, Operations & Security	501,813	-	501,813	16,263,962	16,765,775
Fixed Asset Expenditures:					
Furniture and Equipment	58,864	490,971	549,835	757,956	1,307,791
Building Construction/ Alterations	3,485,551	-	3,485,551	497,890	3,983,441
Total Fixed Asset Expenditures	3,544,415	490,971	4,035,386	1,255,846	5,291,232
Total Expenditures	7,166,765	3,126,960	10,293,725	24,601,976	34,895,701
Support and Revenues Over (Under) Expenditures	$1,174,264	$ 296,550	$ 1,470,814	$ -	$ 1,470,814

NATIONAL GALLERY OF ART
STATEMENT OF ACTIVITY
FOR THE FISCAL YEAR ENDED SEPTEMBER 30, 1982

	Non-Federal Funds				
	Trust Funds	Publications Fund	Total Non-Federal	Federal Funds	Total Combined Funding
Support and Revenues:					
U.S. Government Appropriation	$ -	$ -	$ -	$29,815,000	$29,815,000
Less: Unobligated Bal. Rtd. to Treas.	-	-	-	(1,088)	(1,088)
Unobligated Apprn. for Renovation	-	-	-	(1,084,106)	(1,084,106)
Net Amount Available for Obligation	-	-	-	28,729,806	28,729,806
Investment Income	4,449,817	455,444	4,905,261	-	4,905,261
Gain (Loss) on Security Sales	1,429,327	-	1,429,327	-	1,429,327
Gifts and Bequests	10,940,664	-	10,940,664	-	10,940,664
Publication Sales	-	3,330,513	3,330,513	-	3,330,513
Other	232,880	39,704	272,584	-	272,584
Total Support and Revenues	17,052,688	3,825,661	20,878,349	28,729,806	49,608,155
Expenditures:					
Programs:					
Art Purchases	1,593,940	-	1,593,940	-	1,593,940
Curatorial	580,685	-	580,685	2,330,927	2,911,612
Special Exhibitions	543,294	-	543,294	1,896,850	2,440,144
Editorial & Photography	-	-	-	618,721	618,721
Research Services	236,561	-	236,561	1,129,456	1,366,017
Educational Services	273,339	-	273,339	1,514,681	1,788,020
Fellowships	184,666	-	184,666	100,694	285,360
Music	94,850	-	94,850	75,289	170,139
Publications	-	3,110,497	3,110,497	-	3,110,497
Total Program Expenditures	3,507,335	3,110,497	6,617,832	7,666,618	14,284,450
Administration, Operations & Security:					
Operations & Maintenance	68,425	-	68,425	9,145,706	9,214,131
Security	-	-	-	4,700,074	4,700,074
Administration, Fiscal & Legal	431,701	-	431,701	2,949,948	3,381,649
Total Administration, Operations & Security	500,126	-	500,126	16,795,728	17,295,854
Fixed Asset Expenditures:					
Furniture and Equipment	3,954	37,088	41,042	427,307	468,349
Bldg. Const. in Progress	-	-	-	3,075,625	3,075,625
Buildings	2,341,394	-	2,341,394	764,528	3,105,922
Total Fixed Asset Expenditures	2,345,348	37,088	2,382,436	4,267,460	6,649,896
Total Expenditures	6,352,809	3,147,585	9,500,394	28,729,806	38,230,200
Support and Revenues Over (Under) Expenditures	$10,699,879	$ 678,076	$11,377,955	$ -	$11,377,955

NATIONAL GALLERY OF ART
STATEMENT OF ACTIVITY
FOR THE FISCAL YEAR ENDED SEPTEMBER 30, 1983

	Non-Federal Funds				
	Trust Funds	Publications Fund	Total Non-Federal	Federal Funds	Total Combined Funding
Support and Revenues:					
U.S. Government Appropriation	$ -	$ -	$ -	$34,221,106	$34,221,106
Less: Unobligated Bal. Rtd. to Treas.	-	-	-	(982)	(982)
Unobligated Apprn. for Renovation	-	-	-	(1,858,781)*	(1,858,781)
Net Amount Available for Obligation	-	-	-	32,361,343	32,361,343
Investment Income	4,233,438	301,659	4,535,097	-	4,535,097
Gain (Loss) on Security Sales	2,787,036	223,157	3,010,193	-	3,010,193
Gifts and Bequests	8,443,935	-	8,443,935	-	8,443,935
Publication Sales	-	3,238,898	3,238,898	-	3,238,898
Other	157,295	22,077	179,372	-	179,372
Total Support and Revenues	15,621,704	3,785,791	19,407,495	32,361,343	51,768,838
Expenditures:					
Programs:					
Art Purchases	1,197,152	-	1,197,152	-	1,197,152
Curatorial	796,617	-	796,617	3,681,790	4,478,407
Special Exhibitions	1,703,233	-	1,703,233	1,355,097	3,058,330
Editorial & Photography	-	-	-	702,896	702,896
Research Services	240,973	-	240,973	1,313,941	1,554,914
Educational Services	418,590	-	418,590	1,911,198	2,329,788
Fellowships	116,983	-	116,983	-	116,983
Music	100,731	-	100,731	82,463	183,194
Publications	-	3,590,252	3,590,252	-	3,590,252
Total Program Expenditures	4,574,279	3,590,252	8,164,531	9,047,385	17,211,916
Administration, Operations & Security:					
Operations & Maintenance	73,259	-	73,259	9,635,165	9,708,424
Security	-	-	-	5,372,764	5,372,764
Administration, Fiscal & Legal	407,504	-	407,504	2,901,371	3,308,875
Total Administration, Operations & Security	480,763	-	480,763	17,909,300	18,390,063
Fixed Asset Expenditures:					
Furniture and Equipment	-	3,794	3,794	470,672	474,466
Bldg. Const. in Progress	79,540	-	79,540	3,915,066	3,994,606
Buildings	217,377	-	217,377	1,018,920	1,236,297
Total Fixed Asset Expenditures	296,917	3,794	300,711	5,404,658	5,705,369
Total Expenditures	5,351,959	3,594,046	8,946,005	32,361,343	41,307,348
Support and Revenues Over (Under) Expenditures	$10,269,745	$ 191,745	$10,461,490	$ -	$10,461,490

*Includes recoveries of $2,936 from no-year renovation obligations made during FY 1982

NATIONAL GALLERY OF ART
ESTIMATED STATEMENT OF ACTIVITY
FOR THE FISCAL YEAR ENDED SEPTEMBER 30, 1984

	1984			1983
	Non-Federal	Federal	Total Funds	Total Funds
Support and Revenues:				
U.S. Gov't Appropriation for Annual Operations..	$ -	$28,776,458	$28,776,458	$28,236,018
U.S. Gov't Appropriation for Renovation.....	-	6,108,781	6,108,781	5,984,106
U.S. Gov't Appropriation for Special Exhibitions	-	1,610,000	1,610,000	-
Investment Income.....	5,223,791	-	5,223,791	4,535,097
Gain (Loss) on Security Sales.....	2,792,100	-	2,792,100	3,010,193
Gifts and Bequests.....	7,260,687	-	7,260,687	8,443,955
Publication Sales.....	3,739,879	-	3,739,879	3,238,898
Other.....	224,511	-	224,511	179,372
Total Support and Revenues.....	19,240,968	36,495,239	55,736,207	53,627,619
Expenditures:				
Programs:				
Art Purchases.....	3,813,673	-	3,813,673	1,197,152
Curatorial.....	860,272	3,296,353	4,156,625	3,821,438
Conservation.....	106,598	599,976	706,574	656,969
Special Exhibitions.....	937,410	1,322,696	2,260,106	3,058,330
Editorial & Photography..	-	651,153	651,153	702,896
Research.....	239,185	1,432,412	1,671,597	1,554,914
Education.....	262,955	2,065,378	2,328,333	2,152,888
Fellowships.....	317,671	-	317,671	293,882
Music.....	116,153	87,095	203,248	183,194
Publications.....	4,286,592	-	4,286,592	3,590,252
Total Program Expenditures.....	10,940,509	9,455,063	20,395,572	17,211,916
Administration, Operations & Security:				
Operations & Maintenance.	88,686	10,165,554	10,254,240	9,708,424
Security.....	-	5,790,824	5,790,824	5,372,764
Administration, Fiscal & Legal.....	444,118	3,357,131	3,801,249	3,308,875
Total Administration, Operations & Security	532,804	19,313,509	19,846,313	18,390,063
Fixed Asset Expenditures:				
Furniture and Equipment..	(10,774)	726,579	715,805	474,466
Bldg. Const. in Progress.	-	3,051,370	3,051,370	3,994,606
Buildings.....	13,496	2,976,262	2,989,758	1,236,297
Total Fixed Asset Expenditures.....	2,722	6,754,211	6,756,933	5,705,369
Total Expenditures.....	11,476,035	35,522,783	46,998,818	41,307,348
Support and Revenues Over (Under) Expenditures.....	$ 7,764,933	$ 972,456	$ 8,737,389	$12,320,271

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In fiscal year 1985 the National Gallery revised its financial operating statements. As a result, the non-federal funds reflected in the Statement of Income and Expenses are not reported on the same basis as prior years. Government funds, however, are reported in a consistent manner with prior years.

NATIONAL GALLERY OF ART
STATEMENT OF INCOME AND EXPENSES
FOR THE YEAR ENDED SEPTEMBER 30,1985

	Non-Federal Funds for Operations	Federal	Total Funds
Support and revenues:			
U.S. Government appropriation	$ -	$37,817,534	$37,817,534
Return from endowment funds for operations, less $460,288 returned to principal	2,140,745	-	2,140,745
Gifts and grants - operations	2,059,154	-	2,059,154
Income from special purpose funds utilized	402,724	-	402,724
Publications sales, royalties and other	4,300,396	-	4,300,396
Interest income - operations	168,812	-	168,812
Income from cafeteria	185,479	-	185,479
Total support and revenues	10,257,310	37,817,534	48,074,844
Operating expenses:			
Programs:			
Curatorial	897,171	3,589,602	4,486,773
Conservation	144,872	751,473	896,345
Special exhibitions	2,515,120	2,500,750	5,015,870
Editorial and photography	-	727,569	727,569
Research services	192,041	1,511,751	1,703,792
Educational services	242,294	2,398,328	2,640,622
Fellowships	317,716	-	317,716
Music	137,480	99,987	237,467
Publications	4,329,828	-	4,329,828
Total program expenses	8,776,522	11,575,470	20,351,992
Operations, security and administration:			
Operations and maintenance	-	11,160,742	11,160,742
Security	-	5,564,541	5,564,541
Administration, fiscal and legal	790,333	3,160,657	3,950,990
			0
Total operations, security and administration	790,333	19,885,940	20,676,273
			0
Renovation expenditures	-	1,469,702	1,469,702
Equipment expenditures	-	836,418	836,418
Total expenses	9,566,855	33,767,530	43,334,385
Excess of income over expenses	$690,455	$4,050,004	$4,740,459

National Gallery of Art
Comparative Federal Budget Requests
Fiscal Year 1986

OBJECT CLASS	OMB FY 1986	Congress Adjustments	Adjusted Subtotals	Congress .6% Cut	Final FY 1986
One Year Funds:					
Personnel Compensation	$18,729,000	$ 111,000	$18,840,000	$ (97,000)	$18,743,000
Personnel Benefits	2,459,000	14,000	2,473,000	(13,000)	2,460,000
Subtotal Compensation & Benefits	21,188,000	125,000	21,313,000	(110,000)	21,203,000
Travel of Persons	90,000	-	90,000	-	90,000
Transportation of Things	70,000	-	70,000	-	70,000
Rents, Communications, Utilities	5,207,000	125,000	5,332,000	(67,000)	5,265,000
Printing & Reproduction	214,000	-	214,000	-	214,000
Other Services	2,180,000	-	2,180,000	(26,000)	2,154,000
Supplies & Materials	1,515,000	-	1,515,000	-	1,515,000
Equipment	740,000	100,000	840,000	-	840,000
Lands & Structures	400,000	(400,000)	-	-	-
Subtotal--One Year Funds	31,604,000	(50,000)	31,554,000	(203,000)	31,351,000
No Year Funds:					
Special Exhibitions:					
Travel	120,000	-	120,000	-	120,000
Transportation	700,000	-	700,000	-	700,000
Services	880,000	-	880,000	-	880,000
Supplies & Materials	500,000	-	500,000	-	500,000
Subtotal--Special Exh.	2,200,000	-	2,200,000	-	2,200,000
Repair and Renovation	2,900,000	400,000	3,300,000	(20,000)	3,280,000
Subtotal--No Year Funds	5,100,000	400,000	5,500,000	(20,000)	5,480,000
TOTAL FEDERAL FUNDS	$36,704,000	$ 350,000	$37,054,000	$(223,000)	$36,831,000
Budget after Sequestering					$35,247,000

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National Gallery of Art
Comparative Federal Budget Requests
Fiscal Year 1987

OBJECT CLASS	OMB Request FY 1987	OMB Reduction	Revised Request FY 1987
One Year Funds:			
Personnel Compensation	$19,581,000	$ (517,000)	$19,064,000
Personnel Benefits	2,575,000	(66,000)	2,509,000
Subtotal Compensation & Benefits	22,156,000	(583,000)	21,573,000
Travel of Persons	136,000	(15,000)	121,000
Transportation of Things	171,000	(100,000)	71,000
Rents, Communications, Utilities	5,664,000	(5,000)	5,659,000
Printing & Reproduction	310,000	(86,000)	224,000
Other Services	3,007,000	(770,000)	2,237,000
Supplies & Materials	1,814,000	(252,000)	1,562,000
Equipment	2,765,000	(2,025,000)	740,000
Lands & Structures	-	-	-
Subtotal--One Year Funds	36,023,000	(3,836,000)	32,187,000
No Year Funds:			
Special Exhibitions:			
Travel	100,000	-	100,000
Transportation	830,000	-	830,000
Services	960,000	-	960,000
Supplies & Materials	530,000	-	530,000
Subtotal--Special Exh.	2,420,000	-	2,420,000
Repair and Renovation	2,400,000	-	2,400,000
Subtotal--No Year Funds	4,820,000	-	4,820,000
TOTAL FEDERAL FUNDS	$40,843,000	$(3,836,000)	$37,007,000

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THE WILSON CENTER

BUDGET JUSTIFICATIONS FOR THE FISCAL YEAR 1987

Submitted to the Committees on Appropriations
Congress of the United States

February 1986

GENERAL STATEMENT

Founded on October 28, 1968, with the signing into law of Public Law 90-637, the Woodrow Wilson International Center for Scholars was created as a "living memorial" to a former President. The goal of the Center, as expressed in its congressional charter, is to symbolize and strengthen the fruitful relations between the world of learning and the world of public affairs. The Wilson Center is (along with the National Gallery of Art and the Kennedy Center) one of the three national institutions created by congressional statute in the Smithsonian Institution, yet governed by its own presidentially appointed Board of Trustees. The Center sponsors basic research and original scholarship in the humanities and social sciences, with special emphasis in international and area studies through its eight programs: American Society and Politics; Asia Program; East and West European Programs (within a European Institute); International Security Studies Program; the Kennan Institute for Advanced Russian Studies; Latin American Program; and an omnibus program called History, Culture, and Society.

The major purposes of the Center are (1) to produce scholarship of the highest quality on subjects that are of concern to our civilization and (2) to communicate that scholarship to a wide audience within and beyond Washington through publication and dialogue.

The first of these purposes--to produce scholarship of the highest quality--is met by the Center's fellowship and guest scholar program. Scholars are selected annually in open international competition by outside panels of experts on the basis of their project proposals and on the strength of their professional reputation. Since the Center opened in 1970, approximately 1,000 fellows and guest scholars representing virtually all of the world's regions have been in residence working at the Center in Washington.

Having tested and perfected its scholarship selection procedure over the past decade, the Center plans to devote increasing attention to the fulfillment of its second major purpose, the dissemination of its scholarly research. Dissemination is accomplished in three ways: meetings, publications, and broadcasts.

The Center sponsors approximately twenty multiday conferences each year, and shorter meetings and seminars, which number more than 200 annually and which are attended by approximately 7,000 people. In its increasingly active publications program, the Center produces and widely distributes a range of papers and conference reports. Some 40 books (about the number of fellows that are in residence at any given time) are published during the course of a year as a result of work done at the Center. There are, in addition, many articles, essays, and working papers. In FY 1985, the Center began providing substantive monthly reports on its meetings along with the monthly calendar of forthcoming events which reaches about 4,000 people, including all members of Congress. The Center's scholarly journal, the Wilson Quarterly, draws upon Center fellows and guest scholars and on participants in conferences. The Quarterly publishes five issues a year, with its paid subscription of 110,000 being the highest of any quarterly journal in the United States. A third method of disseminating knowledge is through electronic media. Also relying on fellows and guest scholars, the Center produces a weekly half-hour radio show, DIALOGUE, that is distributed free to 387 radio stations throughout the nation.

The European Institute

In FY 1985, the Wilson Center established a European Institute to bring into an integrated structure its West European Program, a new East European

Program, and the European aspects of International Security Studies. The European Institute will provide a focus for fellowship programs, meetings, and conferences across the whole of Europe, stressing historical, comparative, and theoretical research on trans-European issues as well as those specifically related to eastern and western Europe.

Through the new Institute, the planning, funding, and administration of programs bearing upon Europe will benefit from coordinated direction. The three components of the European Institute will provide--uniquely among centers for advanced study--potential integration of issues involving eastern Europe, western Europe, and such contemporary concerns as the defense of Europe, and the military-political balance of forces. The full sweep of European issues, historical and contemporary, eastern and western, Nordic and Mediterranean, Iberian and Balkan, comparative and theoretical, are thus open for research within this new structure at the Center.

Budget Priorities

The Wilson Center's FY 1986 appropriation represents major progress in the evolution of this "living Presidential memorial." In particular, the addition of resources for conference development and for an endowment challenge fund will dramatically increase the capability of the Center to serve as an important national intellectual resource.

Conference development monies will be used to conduct a significant and broad-ranging conference program in this fiscal year. Topics to be addressed include, for example, U.S.-Soviet relations during the past fifty years, the crisis in the Philippines, trends in ideas and cultural development in Latin America, and, on the occasion of the 100th anniversary of the Statue of Liberty gift from France, the concept of "liberty" in France and the United

States. All conferences will result in publication. (A more detailed explanation of the use of FY 1986 conference funds is contained in this budget justification.) We are confident, also, that the endowment challenge fund will advance appreciably the Center's fund-raising efforts.

The FY 1987 budget request places continued emphasis on the fellowship program and on the support of basic scholarship accomplished at the Center. New resources are proposed in this year's request to redress a severe shortage in basic administrative support that has evolved gradually during the past fifteen years. Dramatic growth in the Center's programs during the first decade and a half of operations have far outpaced the development of administrative capabilities. The small infusion of federal monies sought in this request is essential to correct this deficiency and to establish an appropriate level of support essential for the effective operation of the Center.

WOODROW WILSON INTERNATIONAL CENTER FOR SCHOLARS

Funding Estimates and Appropriation Request

For FY 1987, the Wilson Center requests an appropriation of $3,266,000, a decrease of $106,000 compared with the original FY 1986 appropriation. The following chart compares the FY 1987 request with the FY 1985 appropriation, and the original and adjusted FY 1986 estimates.

SALARIES & EXPENSES

Funding Estimates and Appropriations Request
(dollars in thousands)

	FY 1985 Appropriation		FY 1986 Appropriation		FY 1986 Sequestered	FY 1986 Adjusted		FY 1987 Proposed	
	Work Years	Amount	Work Years	Amount	Amount	Work Years	Amount	Work Years	Amount
I. Fellowship Program	--	$1,199	--	$1,263	-54	--	$1,209	--	$1,316
II. Scholar Support	7	235	7	243	-10	7	233	7	294
III. Public Service	17	715	17	745	-33	17	712	17	780
IV. General Administration	9	452	9	509	-22	9	487	9	801
V. Building Requirements	--	73	--	125	- 5	--	120	--	75
VI. Conference Planning	--	--	--	487	-21	--	466	--	--
Totals	33	$2,674	33	$3,372	-145	33	$3,227	33	$3,266

ENDOWMENT CHALLENGE FUND

FY 1985 Appropriation	FY 1986 Appropriation	FY 1987 Proposed
--	$994	--

The proposed FY 1987 changes to the FY 1986 adjusted appropriation would be applied to the Center's six programs as follows:

I. Fellowship Program (+$107,000)--to fund each fellowship year at the agreed-upon GS-13, step-one level.

II. Scholar Support (+$61,000)--to provide an adequate base for the purchase of books and serials and to fund the full cost of the Center's intern and work-study program, essential for the research support of fellows and guest scholars.

III. Public Service (+$68,000)--to fund fully the cost of core program and publications office staff.

IV. General Administration (+$314,000)--to correct a severe base shortage in nonsalary items of expense, to continue an essential office automation program begun in FY 1986, and to strengthen the Center's core administrative staff.

V. Building Requirements (-$45,000)--to reflect the one-time FY 1986 appropriation for office alterations.

Funding is not included in the FY 1987 request for conference development, nor is funding included in this budget request for a further increment to the endowment challenge fund.

I. Fellowship Program

FY 1985 appropriated	FY 1986 appropriation	FY 1986 sequestered	FY 1986 adjusted	FY 1987 proposed	Requested increase
$1,199,000	$1,263,000	-$54,000	$1,209,000	$1,316,000	$107,000

Analysis of Increase

For FY 1987, a sum of $1,316,000, an increase of $107,000 over the current FY 1986 estimate, is requested to fund fully the Center's 35 fellowship years. Of the proposed increase, $54,000 would restore the amount sequestered in FY 1986 as required by the Deficit Control Act. A further $53,000, the amount of the January 1985 pay increase not included in the Center's base, is needed to maintain each fellowship year at the GS-13 step-one level, as agreed upon by the Office of Management and Budget and Congress in FY 1983.

Fellows and guest scholars, together with core program staff, form the nucleus of the scholarly life at the Center. Their publications and ideas serve as a foundation for numerous conferences and meetings and broader forms of scholarly dissemination through Radio Dialogue and the Wilson Quarterly. It is essential to maintain the 35 fellowship years that are funded with appropriated monies. Slippage below this number would jeopardize the critical mass of scholars that experience has proven to be necessary for the most effective intellectual life at the Center.

Therefore, rather than reduce the number of fellowship years in order to compensate for the funding shortage of $107,000, the Center has been compelled to cut all FY 1986 stipend amounts by approximately 10 percent. It is too early to assess whether or not this reduction will result in fellowship declinations this year. We believe, however, that the combination of frozen federal salaries coupled with increasing academic salaries, erosion in our ability to fund fellowship years at the GS-13 step-one level, and the high cost of living

in the Washington, D.C. metropolitan area, could, in future years, lead to declination of fellowship awards by individuals essential for the Center's intellectual vitality. The Center seeks, as a matter of highest priority, an additional amount of $107,000 for the FY 1987 fellowship program. The total sum requested, $1,316,000, would fund fully the Center's 35 fellowship years at the GS-13, step-one level (35 X $37,599 = $1,316,000). No funds are sought to increase the number of fellowship years.

The following section explains in detail the Center's fellowship and guest scholars selection procedures.

I. Procedures for selection of fellows

The selection of Center fellows is based upon submitted research proposals. Eight independent, outside academic panels are convened annually to review applications for each of the Center's eight programs and to recommend eligible candidates to the Director. The Director makes recommendations for the final selection of prospective fellows to the Fellowship Committee of the Board of Trustees, which then makes the final appointment of fellows.

A. Material requested from each applicant

All applicants must complete a form which gives details of their past history in employment, education, and publications. In addition, they must submit a research proposal of approximately 2,000 words. This proposal statement is the most important item in the selection process and must respond to the following questions: (a) What is the problem to be addressed, its background, and particularly its importance beyond the immediate interests of the specific field of study? (b) What are the basic ideas and hypotheses concerning the problem? (c) What methods or approaches will be used? (d) What body of materials will be drawn upon? (e) Why is the proposed study original? (f) Is there any special relevance of Washington area resources? Since the reviewing panels are composed of persons from a variety of different scholarly traditions and perspectives, we urge the candidate to write in a manner which can be understood by the nonspecialist.

We also ask each applicant to submit a sample of published writing and to provide references from three to five individuals. These references are asked to assess both the project and the applicant: What is the project's importance, particularly its implications beyond the immediate concerns of the specific field of study? To what degree have the key questions been identified? Has a reasonable and promising approach to them been formulated? Are they confident about the applicant's intellectual capacity, experience, and ability to accomplish the proposed study? What is the likelihood that the applicant would contribute significantly to a lively program within the Wilson Center?

B. Outside review by academic panels

Each of the eight programs has an outside review panel, chosen from that program's academic advisory council, including an average of seven individuals and comprising the broadest possible representation of fields, backgrounds, and approaches. The panels meet in late November and December, after receiving the applications at least three weeks before the meeting, reviewing the full dossier of each applicant and providing written comments on each project.

In our letters to our panels, we urge them to consider the following criteria in their review--the quality of the project itself (the degree to which the key questions have been identified and a promising approach outlined), the likelihood that the work can be completed in such a way as to advance our basic understanding of the topic under study, and the experience and achievements of the candidate. We ask the panelists to judge all the proposals from the standpoint of scholarly excellence and promise and the importance and originality of the proposed project--will it generate a significant book which they will actually want to read?

At the panel meeting, after all the leading candidates have been discussed, we ask the panelists to recommend to the Director at least one-half again as many candidates as the number which can be accommodated in each program. In recent years, because of the excellent pool of applicants, the panels have recommended considerably more candidates than we are able to appoint. We ask the panels not for a rigid numerical ranking, but rather for some clear cut-off points of quality so that the recommended list can include a wide variety of approaches, projects, and backgrounds.

The Center has no fixed quotas. But we do hope for diversity in our company of fellows--in academic discipline, in profession (journalism, diplomacy, business, labor, government, as well as academia), in geographical representation (both within the U.S. and throughout the world), in age, and in the approaches and subject matter of the proposed research.

Since we regard the fellows as the heart of the Center and the fellowship selection as our most important single function, the selection procedure has become highly professionalized for each of the eight programs and for the Center as a whole. Not only do the Center's fellowship officer and/or the Director, and/or the Deputy Director sit in on all eight review panels, but each of the eight panels also has its own specialized staff person who bears responsibility for the details of the selection process.

C. Staff review after the eight external panels have met

After the eight academic review panels have each recommended a group of eligible candidates to the Director, the Director, in consultation with the staff, reviews these recommendations and the overall group of candidates eligible for fellowships. At this point, the staff person responsible for each program submits a memorandum to the Director which includes a paragraph on each candidate recommended by the academic panels in the context of overall observations and recommendations from the point of view of each of the eight programs. The Director then draws up a final comprehensive memorandum discussing fully the entire year's fellowship competition and making his recommendations to the Fellowship Committee of the Board of Trustees.

D. Meeting of the Fellowship Committee of the Board of Trustees

Along with his memorandum and recommendations, the Director also sends to the Fellowship Committee of the Board of Trustees the full dossiers on all the candidates discussed in the memorandum. The Trustees receive complete files on almost 50 percent more candidates than they will appoint as fellows. (They also receive, of course, the complete list of the names and projects of all applicants for the entire competition.) About three weeks after receiving this material, the Fellowship Committee of the Board of Trustees meets (usually in early February) with the Director to discuss and review the recommendations. The final selection of fellows and a small number of "alternates" (individuals eligible for fellowship should declinations occur and space become available) is made at the meeting.

1. Special Invitation List

In addition to this procedure, we have a list of about 90 candidates for "special invitation" whom the Director has the authority to appoint as fellows at his discretion. At the Trustees' request, this list was compiled on two occasions and approved by the Board of Trustees on May 14, 1974, and February 22, 1978.

The purpose of this "special invitation" list was to reach that group of scholars who by virtue of their eminence (and resulting commitments) would not normally submit applications. Those individuals who now appear on the list were selected through a careful and thorough external review process.

Since 1975, eight individuals from the special invitation list have been appointed Center fellows. (Six others on that list have in fact been appointed as fellows but submitted regular applications and came through the Center's regular competition.) The special invitation mechanism is used sparingly, and the vast majority of the Center's fellows are appointed via the competitive application process.

2. Out-of-cycle fellowships

On very rare occasions, the Fellowship Committee of the Board may also issue a special fellowship invitation to a person of unusual distinction with an important project who is not on the pre-approved list and who comes to our attention after the annual fellowship competition has closed. In the past seven years, only two individuals have come in with out-of-cycle fellowships. All specially invited fellows outside of the annual competition also submit a complete fellowship application that is reviewed by the appropriate academic panel before submission to the Fellowship Committee of the Board of Trustees before final appointment is made.

II. Procedures for selection of Guest Scholars

The Center also has a guest scholar program which provides greater flexibility in responding to promising candidates throughout the year. Guest scholars are appointed by the Director after systematic staff review and recommendation for periods of normally one to three months. Every effort is

made to ensure outside scholarly review of the projects even of these shorter-term scholars, and appointments are made on a space-available basis after priority consideration has been given to fellows from the annual competition.

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II. Scholar Support

	FY 1985 appropriated	FY 1986 appropriated	FY 1986 sequestered	FY 1986 adjusted	FY 1987 proposed	Requested Increase
Personnel costs	$191,000	$199,000	-$ 9,000	$190,000	$212,000	$22,000
Library	30,000	30,000	- 1,000	29,000	45,000	16,000
Research assistants	14,000	14,000	--	14,000	37,000	23,000
Totals	$235,000	$243,000	-$10,000	$233,000	$294,000	$61,000

This program category includes personnel associated with the Center's library; the receptionist; the coordinator and staff of secretarial services; the books and serials budget; and the cost of the research assistance and the work-study programs. The proposed increase of $22,000 for personnel includes an additional $13,000 to fund the anticipated cost of existing staff in FY 1987 and an additional $9,000 to restore the amount sequestered as a result of the Deficit Control Act. The reduction will be met this year by delay in filling key vacancies as they develop and by cuts to the already deficient books and serials budget.

The increases requested for the books and serials budget and for the intern and work-study programs are justified as follows:

	FY 1986 estimate	FY 1987 proposed	Requested Increase
1. Books and Serials	$29,000	$45,000	$16,000

The Wilson Center's FY 1986 library budget for the purchase of books and serials totals $29,000. Since FY 1976, when the books and serials budget amounted to $26,000, only $3,000 in additional monies has been provided for these purchases, and there has been no increase since FY 1983. Although fellows and staff are fortunate to have access to the Library of Congress, it is essential

to the scholarship being accomplished at the Center (and to avoid overloading the Library of Congress with routine demands) to maintain a basic library of approximately 22,000 volumes and to have current periodicals accessible in the library. With the new East and West European Programs established in FY 1985 and the expansion of the Asia Program to include south and southeast Asia, it has been necessary to purchase additional basic periodicals and books. Moreover, an inflation rate of more than 10 percent per year in the publication industry has severely reduced the Library's purchasing power. To accommodate the new programs and maintain the existing ones and to compensate partially for the effects of inflation, an increase of $16,000 is requested. If approved, the annual rate of increase for book and serial purchases since FY 1976 would be approximately seven percent.

	FY 1986 estimate	FY 1987 proposed	Requested Increase
2. Interns and Work Study Programs	$14,000	$37,000	$23,000

Research assistance to fellows and guest scholars is provided at the Wilson Center through internships and work-study opportunities for college students. Interns and work study students are assigned to fellows and guest scholars on a one-to-one basis, providing invaluable assistance to them with their research while learning a great deal on the job from the master-apprentice relationship. Experience has shown that this program has proven to be extremely beneficial to both scholars and students; it is also highly cost effective, the average cost for each student being $1,050 per year. This relationship with graduate students drawn both from local universities and from colleges and universities across the country also helps to make the Wilson Center known to a young group of potential scholars and teachers.

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Currently, only $14,000 in federal monies is available for the intern and work-study program. The Center has been supplementing this amount regularly by almost $20,000 because the demand for interns has been so considerable. An increase of $23,000 is sought for FY 1987 in order to establish a secure base of $37,000 for this program--providing approximately one intern for each federal fellowship year available at the Center.

III. Public Service

	FY 1985 appropriated	FY 1986 appropriated	FY 1986 sequestered	FY 1986 adjusted	FY 1987 proposed	Requested Increase
Personnel costs	$704,000	$733,000	-$33,000	$700,000	$768,000	$68,000
Travel	6,000	6,000	—	6,000	6,000	--
Consultants	5,000	6,000	--	6,000	6,000	--
Totals	$715,000	$745,000	-$33,000	$712,000	$780,000	$68,000

This category presently consists of the personnel costs of the heads (Secretaries) of the Center's major programs and their principal administrative assistants; the publications program; and the development office. In addition, the travel and Academic Advisory Council fees are included for the broad omnibus program, History, Culture, and Society. Because this program is the most diverse among the Center's programs and receives the greatest range of applications, the Academic Advisory Council plays an especially crucial role in making recommendations for fellowships.

In addition to making recommendations concerning selection, Academic Advisory Councils indicate conference and seminar topics and themes, discuss aspects of academic fields where a new synthesis or fresh inquiry would be timely, and suggest ways to stimulate applicants from underrepresented countries or fields.

For FY 1987, an additional sum of $68,000 is sought to fund the anticipated cost of existing staff in FY 1987 ($35,000) and to recover the amount sequestered in FY 1986 ($33,000). The amount reduced due to the FY 1986 sequestration can be met only through delays in filling key vacancies.

IV. General Administration

The General Administration program category consists of the offices of the Director, Deputy Director, and Assistant Director for Administration; and virtually all of the federal nonsalary objects of expense available to the Center.

The strengthening of the Center's central administration constitutes a major priority in this year's budget request. A thorough review of this account has indicated that programmatic growth during the past decade has far outpaced the capabilities of the Center's administrative structure.

For FY 1987, a total increase of $314,000 is sought for central administration. Of this amount, $34,000 is required in salary monies to fund the anticipated cost of existing staff in FY 1987 ($17,000) and to restore the amount sequestered in FY 1986 ($17,000). (This FY 1986 deficiency is being met by a virtual across-the-board spending freeze throughout administration, thus aggravating existing shortages in basic supplies, equipment, and secretarial services.) A further sum of $280,000 is sought for three vital purposes: (a) to correct a severe base deficiency in objects of expense other than salaries ($123,000); (b) to further the Center's office automation program, begun in FY 1986 ($107,000); and (c) to strengthen the administrative support staff ($50,000).

The following table displays these costs by object class for FY 1985, FY 1986, and FY 1987 and shows proposed increases for FY 1987.

	FY 1985 appropriated	FY 1986 appropriated	FY 1986 requestered	FY 1986 adjusted	FY 1987 proposed	Requested Increase
	(dollars in thousands)					
Personnel Costs	$279	$286	$-17	$269	$353	$ 84
Travel	10	10	--	10	10	--
Rental & Maintenance of Office Machines	31	31	--	31	31	--
Duplicating	28	28	--	28	28	--
Printing	3	3	--	3	3	--
Computer Services	10	10	--	10	10	--
Ofc. Automation	--	42	- 2	40	147	107
Communications	29	34	- 1	33	79	46
Shipping	2	2	--	2	2	--
Misc. Services	27	30	- 1	29	50	21
Supplies	23	23	- 1	22	38	16
Equipment	10	10	--	10	30	20
Space Rental	--	--	--	--	20	20
Totals	452	509	-22	487	801	314

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A. Core "Other Objects" Support — Requested Increase: $123,000

The Wilson Center believes that the provision of basic core administrative support for the operation of a "living presidential memorial" appropriately should be a federal responsibility. An analysis of available funding for nonsalary items of expense compared with actual costs indicates that the Center has been operating under a deficit situation in recent years, with the deficiency being made up from private monies. Two undesirable consequences flow from using private monies to meet core administrative expense. One is that the Center's "General Fund," a pool of unrestricted monies, has become badly depleted. Second, in order to raise the essential administrative support funds, the Center's fund-raising efforts have been deflected, in part, from a larger programmatic focus. With a relatively modest infusion of federal funds, the base shortage in core support that has developed gradually as the Center has expanded its activities can be corrected and, at the same time, steps to rebuild a positive fund balance in the Center's private general fund can be taken. The requested increases are justified as follows:

	FY 1986 estimate	FY 1987 proposed	Requested Increase
1. Communications	$33,000	$79,000	$46,000

In FY 1986, the Center expects to have an amount of $33,000 in its communications budget, only $4,000 more than was available in FY 1983. These monies cover the cost of FTS local and long distance telephone calls as well as overseas calls. A higher rate structure compounded by a new billing system instituted by the Smithsonian during FY 1985 that charges the Wilson Center for actual calls rather than selected samplings has resulted in a serious base shortage. Efforts are being made to hold down costs by charging telephone calls to grants, when appropriate, and by monitoring the volume and purposes of calls. Nevertheless, the Center experienced an actual deficit of $36,000 in FY 1985, which is expected to increase to $46,000 in FY 1987. An additional amount of $46,000 therefore is requested to offset the rising telecommunications costs.

	FY 1986 estimate	FY 1987 proposed	Requested Increase
2. Miscellaneous Services	$29,000	$50,000	$21,000

Funding available in this category has increased by only $2,000 since FY 1984. Included under miscellaneous services are fees for audio-visual, guards, and building management services (for which reimbursement is made to the Smithsonian) and contractual fees paid for manuscript word processing. Costs for the services obtained from the Smithsonian have increased, and the basic stenographic support for Center fellows has always been far less than at other comparable institutions for advanced study. The Center plans to keep these costs to a minimum (largely by continuing to contract for secretarial assistance for manuscript typing

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on an as-needed basis in order to hold down the size of the permanent staff). To defray the anticipated costs of these essential services in FY 1987, however, an additional amount of $21,000 is requested.

	FY 1986 estimate	FY 1987 proposed	Requested Increase
3. Supplies	$22,000	$38,000	$16,000

The Center has not received an increase to cover the cost of essential supplies and materials since FY 1983. As a result, insufficient monies are available to cover even such basic items as pads, pencils, and copy-machine paper, and this shortage causes great inconvenience and inefficiency to fellows and staff. An additional amount of $16,000 is needed in FY 1987 to establish an adequate base for supplies.

	FY 1986 estimate	FY 1987 proposed	Requested Increase
4. Equipment	$10,000	$30,000	$20,000

The Center's FY 1986 equipment base of $10,000 has been increased by only $3,000 since 1982, and is not adequate to cover minimal requirements. The Center lacks adequate supplies of office machines such as typewriters, copiers, and microfilm readers and of essential furnishings, including typing tables, chairs, desks, filing cabinets, and bookcases. For the past several years, surplus equipment and furnishings have been garnered whenever possible, but many of these items have fallen into disrepair. The lack of an adequate supply of working office machinery and essential furniture has resulted in substantial inefficiency and frustration on the part of fellows and staff. To provide minimal but adequate equipment throughout the Center and to replace obsolete office machines over the next several years, an increase of $20,000 over the FY 1986 base of $10,000 is requested.

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	FY 1986 estimate	FY 1987 proposed	Requested Increase
5. Commercial Space Rental	-	$20,000	$20,000

Since September 1985, the Kennan Institute for Advanced Russian Studies has occupied some 2,200 square feet of commercially leased space in L'Enfant Plaza. This space is needed to accommodate an active program of guest scholars and short-term grantees who were housed in exceptionally crowded space in the Castle. The annual space rental cost is approximately $60,000, of which the Kennan Program plans to defray 67 percent using program monies raised independently from the annual federal appropriation. In recognition of the fact that the Kennan Institute has relinquished offices in the Castle, thus making available badly needed administrative space, the Center believes that the remaining 33 percent of the space rental costs appropriately should be paid with federal monies. Accordingly, a sum of $20,000 is requested for FY 1987.

	FY 1986 estimate	FY 1987 proposed	Requested Increase
B. Office Automation	$40,000	$147,000	$107,000

In FY 1986, the Center received funding of $42,000 to begin an office automation program. Presently, the Center is not equipped for office automation, with the exception of a few personal computers purchased by programs with private monies and of older word-processing machines.

The Wilson Center has taken measures to assure that hardware and software are procured within the framework of a carefully developed plan that will meet the Center's present and future needs. Accordingly, the Center contracted with an office automation consulting firm to develop such a plan, using foundation grant funds. The firm completed its review in February 1986.

The specific functions addressed in the consultant's report for which office automation is needed are word processing; administration, including accounting, budgeting and personnel management; and information management including mailing, library services and mailing-list management. The report recommends specific hardware and software applications that will best serve these functional requirements.

To implement the office automation study findings, the Center plans to purchase 37 personal computers and associated printers for use by fellows and staff. In addition, software for word processing, data management, and administrative applications will be required. We estimate that a total of $175,000 to $200,000 will be needed for hardware and software purchases Center-wide during FY 1986 and FY 1987. With $40,000 available in FY 1986, a further $147,000 (an increase of $107,000 over FY 1986) is requested for FY 1987 to continue the purchase plan and to defray maintenance costs for items purchased during FY 1986. A sum of approximately $50,000 will be required in FY 1988

and beyond to complete the purchase plan, cover the costs of maintenance and upgrading of software, and permit progress toward network integration.

C. Additional Support Staff +2 positions and workyears and $50,000

Other than establishing federal positions for Program Secretaries (heads of the Center's programs) and their principal administrative assistants (Program Assistants), the Center has not sought any additional staff positions since FY 1979. The current authorized staff of 33 workyears directs the Center's programs through the Offices of the Director, Deputy Director, Associate Director and Assistant Director for Administration, eight programs, and related support activities including the library, publications, and secretarial support services.

For FY 1987, an additional two positions and workyears and $50,000 are sought to provide essential clerical assistance in the Office of the Director by providing an additional typist position, and to support the Center's personnel administration that will begin to function independently in FY 1987.

1. Typist--Office of the Director

The Director's immediate staff consists of two positions--a Special Assistant and a Secretary. The Special Assistant is involved with all administrative aspects of the Director's office, and also serves as Secretary to the Board of Trustees who have no independent staff support except that of the Director's office. The Secretary in the Director's office must handle scheduling, reception, and a vast amount of typing, Trustee correspondence and travel arrangements. With no staff expansion for approximately a decade and a massively increased level of activity over that time, a backlog in routine typing continually exists. The Office has dealt with this backlog by borrowing assistance from other offices. However, the clerical support staff already is stretched to the limit,

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and therefore such a solution is unsatisfactory. To provide an adequate level of support to the Director's office and to eliminate a constant and critical backlog of work, a clerk-typist position and workyear (GS-4/5) and $18,000 are urgently needed.

2. Personnel Management Specialist--Office of the Assistant Director for Administration

On the recommendation of the Smithsonian Office of Personnel Management, on October 1, 1986, the Wilson Center will assume responsibility for its own personnel recruitment, placement, and position classification. (Up until this point, the Smithsonian personnel office has provided these services to the Center.) The Smithsonian recommendation is based on the fact that the Center has reached the size and degree of complexity that warrants its own personnel operation. Currently, the Center, including the Wilson Quarterly, has 70 federal and trust-funded employees who are classified in approximately 15 separate job titles. In addition, 30-40 interns are brought to the Center each year to serve as research assistants to fellows. To carry out recruitment, placement, and classification responsibilities, an additional position for a personnel management specialist and $32,000 (GS-9/11) is requested. Additional tasks to be addressed by this individual include preparation of a staff personnel handbook and development of employee evaluation and training plans.

V. Building Requirements

	FY 1985 appropriated	FY 1986 appropriated	FY 1986 sequestered	FY 1986 adjusted	FY 1987 proposed	Requested change
Smithsonian payment	$75,000	$125,000	-$5,000	$120,000	$75,000	-$45,000

This amount is used to reimburse the Smithsonian for various services provided to the Wilson Center, including legal, accounting, personnel (the Smithsonian will continue to process health benefits, worker's compensation, and unemployment compensation in FY 1987), supply, security, and buildings management. The cost of these services would be significantly higher if the Center were to carry them out independently. For FY 1987, an amount of $75,000 is requested for the Smithsonian reimbursement, the same amount provided in FY 1985. The sum of $50,000, included in the Center's FY 1986 appropriation for tower office renovations, is not sought again in this request.

VI. Conference Development

FY 1985 appropriated	FY 1986 appropriated	FY 1986 sequestered	FY 1986 adjusted	FY 1987 proposed
--	$487,000	$-21,000	$466,000	--

The FY 1986 adjusted appropriation of $466,000 for conference development represents a major breakthrough in the Center's ability to plan and develop significant conferences. In FY 1986, for the first time, the conference program is a secure part of the presidential memorial. Previously, the uncertainty of private fund-raising efforts coupled with the need for advance planning have resulted in many foregone opportunities, the unfortunate need to reduce the scope of several conferences, and inadequate dissemination of conference results. A firm and secure federal base of support would enable the Center to establish a major conference schedule far enough in advance to assure the attendance of key participants and the accomplishment of adequate preparatory work. Moreover, the provision of federal support would permit program staff to spend more of their time in substantive conference planning.

The core resources, proven experience, exceptional location, and network of alumni and friends all assure that the Wilson Center's conferences are likely to be of major importance. The Center's resident body of fellows and staff provides a solid scholarly base and quality control and guarantees a distinctive atmosphere of nonpartisanship in which long-term perspectives and fundamental questions can be considered. The Wilson Center's established linkages to a broader public permits conference results to be given a wide dissemination--through the Wilson Center's weekly Dialogue series (distributed free to 387 radio stations throughout the nation), and the Center's ongoing publications program (including The Wilson Quarterly's 110,000 paid subscribers).

The Center's FY 1986 conference schedule consists of approximately 19 conferences on subjects that range from intellectual history to issues of

contemporary public policy and that geographically span North and South America, East and West Europe, and Asia. Notably, federal funds applied to FY 1986 conferences will be augmented significantly with private money.

FY 1986 conference development funds were allocated according to a careful Center-wide process. Program secretaries recommended to the Director a FY 1986 conference list based upon: (1) the intrinsic importance of the subject as well as the quality of its proposed treatment and of the participants, (2) the value of the conference in using the Center's special assets and realizing its overall priorities, and (3) the assurance that a publication will derive from the conference.

As a result of this process, the following list of conferences are tentatively scheduled with appropriated monies (the supplementary nonappropriated monies are shown also):

Conference Title	Appropriated Funds	Nonappropriated Funds
1. "Religion and the History of American Intellectual Life"	$ 20,000	$ 25,000
2. "The State and Social Investigation: A Historical Overview of Great Britain and America"	20,000	25,000
3. "Assessing American Options with the Philippines"	4,000	7,000
4. "Alternatives to Deterrence"	10,000	6,000
5. "Korean Thought and Society"	8,000	4,000
6. "International Conference on Burma"	50,000	30,000
7. "East-West Relations after Geneva"	15,000	19,000
8. "German-American Relations"	20,000	14,000
9. "Strategic Defense and Soviet-American Relations"	25,000	35,000
10. "Soviet Agriculture and Food Systems in Comparative Perspectives"	30,000	15,000

[continued]

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Conference Title [continued]	Appropriated Funds	Nonappropriated Funds
11. "Half Century of Relations between the U.S. and the Soviet Union	$ 30,000	$ 15,000
12. "The Soviet Union and Marxist Revolutions"	35,000	5,000
13. "Latin America: Paths Toward Ideological Reconstruction"	16,000	45,000
14. "Rethinking the Latin American City"	25,000	50,000
15. "International Symposium on Urbanization in the Americas"	9,000	30,000
16. "The Concept of Liberty: Its Development and Meaning in France and the United States"	55,000	14,000
17. "The European Neutrals: The Idea and its Results for European Security"	35,000	10,000
18. "Environmental Problems and Policies in Eastern Europe"	10,000	18,000
19. "Minds without Borders" (the 40th anniversary of the Fulbright Program)	40,000	30,000
20. Planning for future conferences: Italy, China, Portugal, and others	9,000	--
	$466,000	$397,000

Among the FY 1986 listing, several represent the first of two or more conferences that will explore a subject in depth. For example, "Half Century of Relations between the U.S. and the Soviet Union" is designed to be the first in a series of conferences to be held in alternate years in Washington, D.C., and in Moscow, focusing on crucial aspects of U.S.-U.S.S.R. relations. These meetings result from proposals made by a leadership delegation of the House of Representatives during an official visit to the Supreme Soviet of the U.S.S.R. The meetings will combine scholarly papers with opportunities for dialogue between American and Soviet political leaders. Two conferences, "East-West Relations after Geneva" and "German-American Relations," will cover a full range of issues between the United States and the Federal Republic of Germany

and will allow congressmen, key administration officials, and representatives of industry to explore important common concerns with their German counterparts. "Latin America: Paths Toward Ideological Reconstruction" will be the first in a three-year series that will examine trends in ideas, culture, ideology, academic development, and the sociology of knowledge in Latin America during the past 40 years as a starting point for developing fresh political and socio-economic ideas. The second conference in the series, "Rethinking the Latin American City," will bring together specialists from 12 countries to reconceptualize and define bases for reconstruction of Latin American cities and their staggering urban problems. "Korean Thought and Society" is an eight-part seminar series that is exploring psychological, literary, and anthropological approaches to Korea.

Additional conferences that will deepen our understanding of other societies include the session on the Philippines, to be held in cooperation with the Congressional Research Service and the House Subcommittee for Asian and Pacific Affairs, and the "International Conference on Burma." Although of long-term importance to the United States, studies about Burma have been given very little significant attention in this country. This conference will serve a pioneering function in bringing together Asian, European, and American scholars who will newly assess Burma and the direction in which it is heading.

The federal appropriation also will make possible, on the occasion of the 100th anniversary of the arrival of the Statue of Liberty gift from France, a thorough examination of the concept of liberty as it has developed in France and in the United States. Conference development monies also will permit greater participation and treatment of the first conference of its kind on the neglected role of government in generating knowledge on conditions and trends in the surrounding society. This appropriation also will expand the scope of

the first large-scale conference ever to examine the presence of religious aspirations and values in the mainstream ostensibly secular traditions of American intellectual history from the Civil War through World War II.

Of more immediate public-policy concern will be conferences on "Alternatives to Deterrence," "Strategic Defense and Soviet-American Relations," "The Soviet Union and Marxist Revolutions," and "The European Neutrals: The Idea and its Results for European Security." Technical subjects of profound political significance will also be explored in other conferences: "Soviet Agriculture and Food Systems in Comparative Perspectives" and "Environmental Problems and Policies in Eastern Europe."

Finally, "Minds without Borders," to be held on the 40th anniversary of the Fulbright Program," will commemorate the largest academic exchange program in world history at a time when international exchanges are again being recognized as a major element of creative public policy. As in so many areas, the Center will build here on prior experience with the international conference commemorating the 30th anniversary of the same program in 1976 and with the major conference on Soviet-American exchanges that President Reagan addressed in June 1984.

FY 1986 federal funds will be used to defray direct conference expenses, including fees for scholarly papers, for bringing key participants to the conference, for editing, the preparation of camera-ready copy, and other publication-related costs, and for dissemination of the results to wider audiences.

Endowment Challenge Fund

FY 1985 Appropriated	FY 1986 Appropriated	FY 1987 Proposed
--	$994,000	--

The Wilson Center's highest priority currently is to communicate the results of its research and meetings to an ever-wider national audience through both the printed and the electronic media. Having validated its scholarship selection procedure over the past decade and having recently expanded its international program structure with the creation of the European Institute and the East and West European Programs, the Center now plans to devote increasing attention to the dissemination of its scholarly research.

Such outreach activity traditionally has been supported almost exclusively by contributed private monies. Each year, the Center raises more than $2 million in private funds to support its programs (meetings, conferences, publications, radio, etc.) and--increasingly in recent years--simply to cover various administrative costs. While the Center has maintained its ability to raise these funds in recognition of the excellence of its programs, more and more time and energy are being devoted each year just to reach the break-even point. If a significant portion of those expenses not covered by annual federal appropriations could be secured by an endowment, the continuing short-term fund-raising activities could be more effectively focused on events that have a secure planning base. Fund-raising efforts then could be expected to achieve even greater success.

The Congress appropriated for FY 1986 a sum of $994,000 as an endowment challenge which would make federal endowment funds available to the Center if matched on a three-to-one basis by private contributions. This federal grant is intended as a spur to private contributors, placing the primary burden on

private fund-raising but continuing to emphasize the historic public/private nature of the Center's support.

Greatly encouraged by this federal support, the Center has established an investment policy committee and is engaged in a major endowment campaign designed to build a fund of 12 million to 15 million dollars. A fund of such magnitude would earn sufficient interest to cover a significant part of the programmatic expenses currently covered by exhaustive, annual private fund-raising. The Center believes, as corroborated by key private donors, that the federal matching contribution to an endowment fund will be crucial to the successful development of such a fund.

WOODROW WILSON INTERNATIONAL CENTER FOR SCHOLARS

CONSOLIDATED STATEMENT, FY 1985

October 1, 1984 - September 30, 1985

INCOME

1. Federal Appropriation		$2,674,000
2. Non-Appropriated funds carried forward from FY 1984:		
General Center	$ 395,000[a]	
Kennan Institute	1,098,000[b]	
Latin American Program	887,000[c]	
International Security Studies	586,000	
Asia Program	39,000	
American Society and Politics	8,000	
History, Culture, and Society	7,000	
East European Program	26,000	
West European Program	15,000[d]	
		$3,061,000
3. Non-Appropriated funds received during FY 1985:		
General Center	$1,187,000[e]	
Kennan Institute	500,000	
Latin American Program	320,000	
International Security Studies	100,000	
Asia Program	155,000	
American Society and Politics	41,000	
History, Culture, and Society	--	
East European Program	160,000	
West European Program	177,000	
		$2,640,000
4. Wilson Quarterly		
P&L balance, start of year	$ <416,000>	
Income, FY 1985	1,892,000	
Contributions carried forward from 1984	154,000	
Contributions received, FY 1984	118,000	
		$1,748,000
Total Income, FY 1985		$10,123,000

[a]General Center endowment: $301,000 of the $395,000.
[b]KIARS endowment: $427,000 of the $1,098,000.
[c]LAP working reserve: $409,000 of the $887,000.
[d]EEP endowment: $10,000 of the $15,000.
[e]General Center endowment: $427,000 of the $1,187,000.

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WOODROW WILSON INTERNATIONAL CENTER FOR SCHOLARS

ACTUAL CONSOLIDATED STATEMENT, FY 1985

October 1, 1984 - September 30, 1985

	EXPENDITURES			
	Federal Appropriated	Non-Appropriated	Total	
1. General Center				
A. For General Administration				
Personnel	$655,000	$228,000	$883,000	
Other*	325,000	166,000	491,000	
B. For fellowships	--	85,000	85,000	
C. For programs, conferences, etc.	--	337,000	337,000	
				$1,796,000
2. Kennan Institute				
A. For General Administration				
Personnel	87,000	69,000	156,000	
Other*	--	143,000	143,000	
B. For fellowships	100,000	145,000	245,000	
C. For programs, conferences, etc.	--	83,000	83,000	
				$ 627,000
3. Latin American Program				
A. For General Administration				
Personnel	91,000	132,000	223,000	
Other*	--	41,000	41,000	
B. For fellowships	203,000	20,000	223,000	
C. For programs, conferences, etc.	--	372,000	372,000	
				$ 859,000
4. International Security Studies				
A. For General Administration				
Personnel	89,000	140,000	229,000	
Other*	--	83,000	83,000	
B. For fellowships	169,000	--	169,000	
C. For programs, conferences, etc.	--	128,000	128,000	
				$ 609,000
5. Asia Program				
A. For General Administration				
Personnel	79,000	--	79,000	
Other*	--	9,000	9,000	
B. For fellowships	122,000	44,000	166,000	
C. For programs, conferences, etc.	--	78,000	78,000	
				$ 332,000

(continued)

ACTUAL CONSOLIDATED STATEMENT, FY 1985 (continued)

	EXPENDITURES			
	Federal Appropriated	Non-Appropriated	Total	
6. American Society and Politics				
A. For General Administration				
Personnel	$ 87,000	$ --	$ 87,000	
Other*	--	7,000	7,000	
B. For fellowships	238,000	--	238,000	
C. For programs, conferences, etc.	--	1,000	1,000	$ 333,000
7. History, Culture, and Society				
A. For General Administration				
Personnel	107,000	--	107,000	
Other*	4,000	--	4,000	
B. For fellowships	207,000	--	207,000	
C. For programs, conferences, etc.	--	7,000	7,000	$ 325,000
8. East European Program				
A. For General Administration				
Personnel	--	45,000	45,000	
Other*	--	9,000	9,000	
B. For fellowships	7,000	14,000	21,000	
C. For programs, conferences, etc.	--	--	--	$ 75,000
9. West European Program				
A. For General Administration				
Personnel	--	96,000	96,000	
Other*	--	13,000	13,000	
B. For fellowships	102,000	--	102,000	
C. For programs, conferences, etc.	--	42,000	42,000	$ 253,000
10. Wilson Quarterly				
A. For General Administration				
Personnel	--	481,000	481,000	
Other*	--	1,527,000	1,527,000	
B. For fellowships	--	--	--	
C. For programs, conferences, etc.	--	--	--	$2,008,000
Expenditure Totals	$2,672,000	$4,545,000		$7,217,000
FY 1985 Program Funds to be carried forward to FY 1986:				$2,906,000
TOTAL				$10,123,000

*Includes travel, advisory panels, supplies, equipment, printing, etc.

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WOODROW WILSON INTERNATIONAL CENTER FOR SCHOLARS

ESTIMATED CONSOLIDATED STATEMENT, FY 1986

October 1, 1985 - September 30, 1986

INCOME

1. Federal Appropriation (adjusted)		$3,227,000[a]
2. Non-Appropriated funds carried forward from FY 1985:		
General Center	$ 766,000[b]	
Kennan Institute	1,158,000[c]	
Latin American Program	642,000[d]	
International Security Studies	335,000	
Asia Program	63,000	
American Society and Politics	41,000	
History, Culture, and Society	14,000	
East European Program	118,000[e]	
West European Program	41,000	
		$3,178,000
3. Estimated Non-Appropriated funds scheduled to come in during FY 1986:		
General Center	$ 928,000[f]	
Kennan Institute	800,000	
Latin American Program	83,000	
International Security Studies	90,000	
Asia Program	1,037,000[g]	
American Society and Politics	13,000	
History, Culture, and Society	--	
East European Program	268,000	
West European Program	178,000	
		$3,397,000
4. Non-Appropriated funds needed to be raised in FY 1986 for FY 1986 program:		
General Center	$ 408,000	
Kennan Institute	18,000	
Latin American Program	117,000	
International Security Studies	245,000	
Asia Program	222,000	
American Society and Politics	28,000	
History, Culture, and Society	--	
East European Program	--	
West European Program	217,000	
		$1,255,000

(continued)

ESTIMATED CONSOLIDATED STATEMENT, FY 1986 (continued)

INCOME

5. Wilson Quarterly		
P&L balance, start of year	$ <416,000>	
Estimated Income, FY 1986	1,919,000	
Contributions received forward from 1985	272,000	
Contributions received, FY 1986	--	
		$1,775,000
Total Estimated Income, FY 1986		$12,832,000

---

[a]Excludes Endowment Challenge Fund of $994,000.
[b]General Center Endowment: $728,000 of the $766,000.
[c]KIARS Endowment: $1,058,000 of the $1,158,000.
[d]LAP Working Reserve: $409,000 of the $642,000.
[e]EEP Endowment: $18,000 of the $118,000.
[f]General Center Endowment: $453,000 of the $928,000.
[g]AP Endowment: $1,000,000 of the $1,037,000.

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WOODROW WILSON INTERNATIONAL CENTER FOR SCHOLARS

ESTIMATED CONSOLIDATED STATEMENT, FY 1986

October 1, 1985 - September 30, 1986

EXPENDITURES

	Federal Adjusted Appropriations	Non-Appropriated	Total	
1. General Center				
A. For General Administration				
Personnel	$620,000	$341,000	$961,000	
Other*	381,000	175,000	556,000	
B. For fellowships	69,000	48,000	117,000	
C. For programs, conferences, etc.	49,000	332,000	381,000	
				$2,015,000
2. Kennan Institute				
A. For General Administration				
Personnel	86,000	202,000	288,000	
Other*	--	253,000	253,000	
B. For fellowships	138,000	215,000	353,000	
C. For programs, conferences, etc.	95,000	149,000	244,000	
				$1,138,000
3. Latin American Program				
A. For General Administration				
Personnel	90,000	112,000	202,000	
Other*	--	37,000	37,000	
B. For fellowships	138,000	9,000	147,000	
C. For programs, conferences, etc.	50,000	176,000	226,000	
				$ 612,000
4. International Security Studies				
A. For General Administration				
Personnel	89,000	198,000	287,000	
Other*	--	105,000	105,000	
B. For fellowships	138,000	15,000	153,000	
C. For programs, conferences, etc.	50,000	193,000	243,000	
				$ 788,000
5. Asia Program				
A. For General Administration				
Personnel	79,000	--	79,000	
Other*	--	18,000	18,000	
B. For fellowships	138,000	54,000	192,000	
C. For programs, conferences, etc.	62,000	250,000	312,000	
				$ 601,000

(continued)

ESTIMATED CONSOLIDATED STATEMENT, FY 1986 (continued)

	EXPENDITURES			
	Federal Adjusted Appropriations	Non-Appropriated	Total	
6. American Society & Politics				
A. For General Administration				
Personnel	$ 87,000	$ —	$ 87,000	
Other*	—	18,000	18,000	
B. For fellowships	242,000	—	242,000	
C. For programs, conferences, etc.	40,000	64,000	104,000	$ 451,000
7. History, Culture, and Society				
A. For General Administration				
Personnel	108,000	—	108,000	
Other*	12,000	—	12,000	
B. For fellowships	242,000	—	242,000	
C. For programs, conferences, etc.	—	14,000	14,000	$ 376,000
8. East European Program				
A. For General Administration				
Personnel	—	139,000	139,000	
Other*	—	58,000	58,000	
B. For fellowships	35,000	83,000	118,000	
C. For programs, conferences, etc.	10,000	37,000	47,000	$ 362,000
9. West European Program				
A. For General Administration				
Personnel	—	141,000	141,000	
Other*	—	23,000	23,000	
B. For fellowships	69,000	—	69,000	
C. For programs, conferences, etc.	110,000	271,000	381,000	$ 614,000
10. Wilson Quarterly				
A. For General Administration				
Personnel	—	516,000	516,000	
Other*	—	1,403,000	1,403,000	
B. For fellowships	—	—	—	
C. For programs, conferences, etc.	—	—	—	$1,919,000
Total Estimated Expenditures FY 1986:	$3,227,000	$5,649,000		$8,876,000
FY 1986 Program Funds to be carried forward to FY 1987:				$3,956,000
TOTAL				$12,832,000

*Includes travel, advisory panels, supplies, equipment, printing, etc.

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WOODROW WILSON INTERNATIONAL CENTER FOR SCHOLARS

ESTIMATED CONSOLIDATED STATEMENT, FY 1987

October 1, 1986 - September 30, 1987

INCOME

1. Federal Appropriation		$3,266,000
2. Non-Appropriated funds carried forward from FY 1986:		
General Center	$1,206,000[a]	
Kennan Institute	1,157,000[b]	
Latin American Program	508,000[c]	
International Security Studies	159,000	
Asia Program	1,000,000[d]	
American Society and Politics	--	
History, Culture, and Society	--	
East European Program	69,000[e]	
West European Program	1,000	
		$4,100,000
3. Estimated Non-Appropriated funds scheduled to come in during FY 1987:		
General Center	$ 928,000[f]	
Kennan Institute	800,000	
Latin American Program	83,000	
International Security Studies	90,000	
Asia Program	37,600	
American Society and Politics	13,000	
History, Culture, and Society	--	
East European Program	268,000	
West European Program	178,000	
		$2,397,000
4. Non-Appropriated funds needed to be raised in FY 1987 for FY 1987 program:		
General Center	$ 425,000	
Kennan Institute	18,000	
Latin American Program	117,000	
International Security Studies	245,000	
Asia Program	222,000	
American Society and Politics	28,000	
History, Culture, and Society	--	
East European Program	--	
West European Program	217,000	
		$1,272,000

(continued)

ESTIMATED CONSOLIDATED STATEMENT, FY 1987 (continued)

INCOME

5. Wilson Quarterly		
P&L balance, start of year	$ <416,000>	
Estimated Income, FY 1987	1,919,000	
Contributions carried forward from 1986	272,000	
Contributions received, FY 1987	---	
		$ 1,775,000
Total Estimated Income, FY 1987		$12,810,000

---

[a]General Center Endowment: $1,181,000 of the $1,206,000.
[b]KIARS Endowment: $1,068,000 of the $1,157,000.
[c]LAP Working Reserve: $409,000 of the $508,000.
[d]AP Endowment: $1,000,000 of the $1,000,000.
[e]EEP Endowment: $18,000 of the $69,000.
[f]General Center Endowment: $453,000 of the $928,000.

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WOODROW WILSON INTERNATIONAL CENTER FOR SCHOLARS

ESTIMATED CONSOLIDATED STATEMENT, FY 1987

October 1, 1986 - September 30, 1987

EXPENDITURES

	Federal Adjusted Appropriations	Non-Appropriated	Total	
1. General Center				
A. For General Administration				
Personnel	$ 736,000	$ 341,000	$1,077,000	
Other*	605,000	175,000	780,000	
B. For fellowships	71,000	48,000	119,000	
C. For programs, conferences, etc.	--	332,000	332,000	
				$2,308,000
2. Kennan Institute				
A. For General Administration				
Personnel	82,000	202,000	284,000	
Other*	--	253,000	253,000	
B. For fellowships	142,000	215,000	357,000	
C. For programs, conferences, etc.	--	149,000	149,000	
				$1,043,000
3. Latin American Program				
A. For General Administration				
Personnel	85,000	112,000	197,000	
Other*	--	37,000	37,000	
B. For fellowships	142,000	9,000	151,000	
C. For programs, conferences, etc.	--	176,000	176,000	
				$ 561,000
4. International Security Studies				
A. For General Administration				
Personnel	85,000	198,000	283,000	
Other*	--	105,000	105,000	
B. For fellowships	142,000	15,000	157,000	
C. For programs, conferences, etc.	--	193,000	193,000	
				$ 738,000
5. Asia Program				
A. For General Administration				
Personnel	76,000	--	76,000	
Other*	--	18,000	18,000	
B. For fellowships	142,000	54,000	196,000	
C. For programs, conferences, etc.	--	250,000	250,000	
				$ 540,000

(continued)

ESTIMATED CONSOLIDATED STATEMENT, FY 1987 (continued)

	EXPENDITURES			
	Federal Adjusted Appropriations	Non-Appropriated	Total	
6. American Society & Politics				
A. For General Administration				
Personnel	$ 84,000	$ --	$ 84,000	
Other*	--	18,000	18,000	
B. For fellowships	250,000	--	250,000	
C. For programs, conferences, etc.	--	64,000	64,000	
				$ 416,000
7. History, Culture, and Society				
A. For General Administration				
Personnel	103,000	--	103,000	
Other*	12,000	--	12,000	
B. For fellowships	250,000	--	250,000	
C. For programs, conferences, etc.	--	14,000	14,000	
				$ 379,000
8. East European Program				
A. For General Administration				
Personnel	--	139,000	139,000	
Other*	--	58,000	58,000	
B. For fellowships	71,000	83,000	154,000	
C. For programs, conferences, etc.	--	37,000	37,000	
				$ 388,000
9. West European Program				
A. For General Administration				
Personnel	82,000	141,000	223,000	
Other*	--	23,000	23,000	
B. For fellowships	106,000	--	106,000	
C. For programs, conferences, etc.	--	271,000	271,000	
				$ 623,000
10. Wilson Quarterly				
A. For General Administration				
Personnel	--	516,000	516,000	
Other*	--	1,403,000	1,403,000	
B. For fellowships	--	--	--	
C. For programs, conferences, etc.	--	--	--	
				$ 1,919,000
Total Estimated Expenditures, FY 1987:	$3,266,000	$5,649,000		$ 8,915,000
FY 1987 Program Funds to be carried forward to FY 1988:				$ 3,895,000
TOTAL				$12,810,000

*Includes travel, advisory panels, supplies, equipment, printing, etc.

Public Law 90-637
90th Congress, S. 3174
October 24, 1968

An Act

To establish a National Memorial to Woodrow Wilson.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Woodrow Wilson Memorial Act of 1968." Woodrow Wilson Memorial Act of 1968.

82 STAT. 1356
82 STAT. 1357

DECLARATION OF POLICY

SEC. 2. The Congress hereby finds and declares—

(1) that a living institution expressing the ideals and concerns of Woodrow Wilson would be an appropriate memorial to his accomplishments as the twenty-eighth President of the United States, a distinguished scholar, an outstanding university president, and a brilliant advocate of international understanding;

(2) that the Woodrow Wilson Memorial Commission, created by joint resolution of Congress, recommended that an International Center for Scholars be constructed in the District of Columbia in the area north of the proposed Market Square as part of the Nation's memorial to Woodrow Wilson;

(3) that such a center, symbolizing and strengthening the fruitful relation between the world of learning and the world of public affairs, would be a suitable memorial to the spirit of Woodrow Wilson; and

(4) that the establishment of such a center would be consonant with the purposes of the Smithsonian Institution, created by Congress in 1846 "for the increase and diffusion of knowledge among men."

THE CENTER AND THE BOARD OF TRUSTEES

SEC. 3. (a) There is hereby established in the Smithsonian Institution a Woodrow Wilson International Center for Scholars and a Board of Trustees of the Center (hereinafter referred to as the "Center" and the "Board"), whose duties it shall be to maintain and administer the Center and site thereof and to execute such other functions as are vested in the Board by this Act. Woodrow Wilson International Center for Scholars; Board of Trustees of the Center, Establishment.

(b) The Board of Trustees shall be composed of fifteen members as follows: Membership.

(1) the Secretary of State;

(2) the Secretary of Health, Education, and Welfare;

(3) the Chairman of the National Endowment for the Humanities;

(4) the Secretary of the Smithsonian Institution;

(5) the Librarian of Congress;

(6) the Archivist of the United States;

(7) one appointed by the President from time to time from within the Federal Government; and

(8) eight appointed by the President from private life.

(c) Each member of the Board of Trustees specified in paragraphs (1) through (7) of subsection (b) may designate another official to serve on the Board of Trustees in his stead.

(d) Each member of the Board of Trustees appointed under paragraph (8) of subsection (b) shall serve for a term of six years from the expiration of his predecessor's term; except that (1) any trustee appointed to fill a vacancy occurring prior to the expiration of the term for which his predecessor was appointed shall be appointed for the remainder of such term, and (2) the terms of office of the trustees first taking office shall begin on the date of the enactment of this Act, Term.

and shall expire as designated at the time of appointment, two at the end of two years, three at the end of four years, and three at the end of six years. No trustee of the Board chosen from private life shall be eligible to serve in excess of two consecutive terms, except that a trustee whose term has expired may serve until his successor has qualified.

82 STAT. 1357
82 STAT. 1358

(e) The President shall designate a Chairman and a Vice Chairman from among the members of the Board chosen from private life.

POWERS AND DUTIES OF THE BOARD

SEC. 4. (a) In administering the Center, the Board shall have all necessary and proper powers, which shall include but not be limited to the power to—

(1) appoint scholars, from the United States and abroad, and, where appropriate, provide stipends, grants, and fellowships to such scholars, and to hire or accept the voluntary services of consultants, advisory boards, and panels to aid the Board in carrying out its responsibilities;

(2) solicit, accept, and dispose of gifts, bequests, and devices of money, securities, and other property of whatsoever character for the benefit of the Center; any such money, securities, or other property shall, upon receipt, be deposited with the Smithsonian Institution, and unless otherwise restricted by the terms of the gift, expenditures shall be in the discretion of the Board for the purposes of the Center;

(3) obtain grants from, and make contracts with, State, Federal, local, and private agencies, organizations, institutions, and individuals;

(4) acquire such site as a location for the Center as may subsequently be authorized by the Congress;

(5) acquire, hold, maintain, use, operate, and dispose of any physical facilities, including equipment, necessary for the operation of the Center;

(6) appoint and fix the compensation and duties of the director and such other officers of the Center as may be necessary for the efficient administration of the Center; the director and two other officers of the Center may be appointed and compensated without regard to the provisions of title 5 of the United States Code governing appointments in the competitive service and chapter 51 and subchapter III of chapter 53 of title 5 of the United States Code; and

5 USC 5101 et seq., 5331 et seq.

(7) prepare plans and specifications for the Center, including the design and development of all buildings, facilities, open spaces, and other structures on the site in consultation with the President's Temporary Commission on Pennsylvania Avenue, or its successor, and with other appropriate Federal and local agencies, such plans to include an exterior classic frieze memorial to Woodrow Wilson.

(b) The Board shall, in connection with acquisition of any site authorized by Congress, as provided for in paragraph (4) of subsection (a) of this section, provide, to businesses and residents displaced from any such site, relocation assistance, including payments and other benefits, equivalent to that authorized to displace businesses and residents under the Housing Act of 1949, as amended. The Board shall develop a relocation program for existing businesses and residents within the site and submit such program to the government of the District of Columbia for a determination as to its adequacy and feasibility. In providing such relocation assistance and developing

63 Stat. 413.
42 USC 1441 note.

such relocation program the Board shall utilize to the maximum extent the services and facilities of the appropriate Federal and local agencies.

ADMINISTRATION

SEC. 5. The Board is authorized to adopt an official seal which shall be judicially noticed and to make such bylaws, rules, and regulations as it deems necessary for the administration of its functions under this Act, including, among other matters, bylaws, rules, and regulations relating to the administration of its trust funds and the organization and procedure of the Board. A majority of the members of the Board shall constitute a quorum for the transaction of business.

APPROPRIATION

SEC. 6. There are hereby authorized to be appropriated to the Board such funds as may be necessary to carry out the purposes of this Act: *Provided*, That no more than $200,000 shall be authorized for appropriation through fiscal year 1970 and no part of that appropriation shall be available for construction purposes.

RECORDS AND AUDIT

SEC. 7. The accounts of the Board shall be audited in accordance with the principles and procedures applicable to, and as part of, the audit of the other Federal and trust funds of the Smithsonian Institution.

Approved October 24, 1968.

LEGISLATIVE HISTORY:

HOUSE REPORT No. 1942 accompanying H. R. 19088 (Comm. on House Administration).
SENATE REPORT No. 1599 (Comm. on Rules & Administration).
CONGRESSIONAL RECORD, Vol. 114 (1968):
Oct. 1: Considered and passed Senate.
Oct. 7: Considered and passed House, amended, in lieu of H. R. 19088.
Oct. 11: Senate agreed to House amendment.

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NATIONAL ENDOWMENT FOR THE ARTS

APPROPRIATIONS REQUEST

FISCAL YEAR 1987

Submitted to the Congress
February 5, 1986

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INTRODUCTION

The National Endowment for the Arts herewith presents its Fiscal Year 1987 budget request of $144.9 million: $117.9 million for grants and administration, and $27.0 million in matching (indefinite) funds. This level is consistent with the Administration's requests of FY 86 and FY 85. Even with the pressures of the Gramm-Rudman-Hollings deficit reduction legislation, we are committed to a significant budget for the arts at the Federal level. The budget we propose will continue the support of excellence in the arts and access to that excellence; it will catalyze support for the arts, and will help bring national recognition to the best of the nation's art and artists.

I. Highlights in the Field

The past year has brought many exciting developments in the arts. Alive From Off Center, an eight-part series, was launched on public television, bringing the work of adventurous American artists to wide audiences. The program featured collaborations by such artists as Sam Shepard, Joseph Chaikin and Shirley Clarke; John Sanborn and Kit Fitzgerald; and works by William Wegman, Laurie Anderson and Nam June Paik. The second season, scheduled for the summer of 1986, will include a special five-part "sub-series" on contemporary dance.

Also, 1985 marked the first American Music Week (November 4-10), a nationwide celebration of American music and musicians. As President Reagan observed in recognizing American Music Week, it was "an opportunity for all Americans to become better acquainted with our rich musical heritage, which is still very much alive today." The week featured 700 musical events, including 50 premieres. The success of this celebration has generated major financial support from the private sector for subsequent activities. American Music Week will be an annual event.

For the first time, America's not-for-profit small presses were featured as a group at two of the most influential international book fairs, Liber (Spain) and the Frankfurt International Book Fair (West Germany). This was the result of the collaboration of two agencies: the United States Information Agency and the National Endowment for the Arts. This participation generated serious interest from over fifteen foreign publishers in purchasing over fifty American titles for foreign publication. Several contracts have already been signed.

The opening of the Wiesner Building at the Massachusetts Institute of Technology in the fall of 1985 marked the culmination of successful collaborations between artists and architect. From the very beginning of the design process, visual artists Kenneth Noland, Scott Burton, and Richard Fleischner worked with architect I.M. Pei to develop a beautiful new arts facility with the work of the artists integrated into the building and surrounding grounds.

All of these undertakings were supported in part by the National Endowment for the Arts

On the financial side, the Bureau of Labor Statistics reported that in 1984, revenues of not-for-profit performing arts events increased 9.4 percent. Real GNP grew 2.9 percent in FY 85, and is forecast to grow another 3.0 percent in FY 86. This growth should assist the arts generally. During 1985, the number of artists employed grew 4.4 percent vs. 1984, more than double the rate of growth of general civilian employment.

Private donations to cultural endeavors, which are by far their largest source of contributed income, grew over 13.7 percent in 1984, according to the American Association of Fundraising Counsel, bringing total giving to an estimated $4.64 billion.

Support from state and local governments is also strong. The National Assembly of State Arts Agencies reported in November 1985 that state appropriations for the arts for FY 86 total $201.9 million, an increase of 25 percent vs. FY 85, a record high, and a figure exceeding the budget of the Arts Endowment. Local arts agencies have also shown positive trends. Our records of agencies represented in the Locals Test applicant pool for those communities of over 100,000 in population show that local government appropriations to the arts have been increasing at an average annual rate of 12.8 percent between fiscal years 1979 and 1983. Since 1980-81, the trend shows higher rates of increase than in previous years. During the first year of grants from the Locals Test Program, participating agencies were able to use the Federal funds to help lever an increase of 95 percent.

II. Highlights at the Federal Level

In the Federal arena, 1985 marked the twentieth anniversary of the Endowment. This occasion provided an opportunity to bring renewed public attention to the importance of the arts, and we worked with our public partners, as well as with artists, arts organizations, corporations and foundations, to do this. President Reagan recognized September 23-29 as National Arts Week, and noted that it was "a time to acknowledge the importance of the arts for our Nation and to celebrate the past two decades of public-private partnership in this area." His statement was underlined by dozens of declarations at the state and local level, where governors, mayors and county officials issued statements and proclamations calling on Americans to join in celebrating the week. The week was celebrated through more than 800 public arts events in 50 states and in U.S. special jurisdictions.

Of course, a major event in 1985 was the Congressional consideration and enactment of the Endowment's reauthorization. The agency was authorized for another five years, through FY 90. Among other issues, Congress expressed a renewed commitment to excellence, a concern for arts education, and a commitment to reaching "underrepresented" groups. Congress asked to receive reports on the "state of the arts," on arts education, and on museums. Also, Congress provided for potential participation of state and local arts agencies in the Challenge Grant Program, and stressed that long-term enhancement of the arts was an important role for the future of this Program.

Another highlight of 1985 was the first presentation of the National Medal of Arts to twelve artists and patrons by President Reagan, as called for by H.R. 2751, which passed the Congress and was signed into law in May 1984. The President was advised on the selection by the National Council on the Arts, as directed by Congress. Noting the twentieth anniversary of the National Endowment for the Arts, the President commented, "For two decades now, the National Endowment has been doing wonderful work. Most recently, they've been involved in a great endeavor to preserve and protect our rich heritage of film and television and the dance. And they've been building endowments for fine art institutions and helping struggling young artists find an audience."

Most recently, the role of the Endowment was evident in the presentation in the Capitol rotunda of the Congressionally-mandated sculpture of Martin Luther King. The artist, John Wilson, was selected through an Endowment-organized panel process, and his fees were paid, in part, by funding from the Endowment which matched a direct appropriation made by the Congress.

III. Highlights of Recent Endowment Work

The National Endowment continues to support arts organizations and artists of excellence, as well as efforts to increase access to excellence. In FY 85, we provided ongoing support to arts organizations and, from virtually every Program of the agency, supported directly individual artists with over 700 grants. We continued partnership efforts with state arts agencies and regional organizations, which continue to receive, on a competitive basis, Program funds above and beyond the Basic State Grants (in FY 84, they received $8.3 million from the Grants and Administration account in excess of the formula grants from State Programs). We also provided support for several initiatives -- some new, some ongoing -- designed to promote artistry within institutions, assist outstanding individual artists, and encourage access to and understanding of artistic excellence.

These recent efforts, generally funded from the Grants and Administration account, include the following:

Dance: National Performance Network (FY 86: $100,000). These funds are supporting the development of networks among alternate spaces for the presentation of smaller dance companies, which often have trouble in obtaining bookings in "traditional spaces." This initiative also helps modern and ethnic companies reach broadened audiences. Tours have reached such states as Georgia, Louisiana, Ohio and Colorado.

Dance/Inter-Arts/State Programs Presenting/Touring Initiative (DIS) (FY 85: $659,000; FY 86: $800,000). This is a joint effort of the Dance, Inter-Arts and State Programs. Funding supports state and regional arts agencies to make grants to presenters for artists fees of out-of-state dance companies. This initiative is helping audiences in smaller communities see dance companies which might

otherwise not tour to their region. During the 1984-85 season, the number of engagements supported grew 21 percent vs. the previous season, reaching 300 communities nationwide.

Dance Television Series (FY 85: $300,000; FY 86: $300,000). This is a cooperative effort between the Dance and Media Arts Programs to develop a dance television series (a sub-series of Alive From Off Center) oriented to smaller, lesser known dance companies which are less likely to be featured on television. Special support in this area is giving national audiences a chance to see the work of outstanding but lesser known companies.

Expansion Arts: Community Foundation Initiative (FY 85: $626,000; FY 86: $800,000). This effort is designed to stimulate among community foundations the creation of endowments, assisting Expansion Arts organizations as well as other smaller groups. Organizations from communities such as Knoxville, TN, Albuquerque, NM, and Concord, NH have successfully competed in this program, and they are finding ways to match Federal dollars at a rate of two to one for the purpose of endowing programs for grants to outstanding emerging arts groups in their communities.

Folk Arts: State Apprenticeship Program (FY 85: $351,000; FY 86: $500,000). This effort funds statewide apprenticeship programs in the Folk Arts. To date, fifteen state arts agencies have participated, supporting apprentices in traditions ranging from Slovenian button box accordion playing to native American silverwork.

Inter-Arts: Interdisciplinary Artists Fellowships (FY 85: $100,000; FY 86: $100,000). This initiative, co-funded with the Rockefeller Foundation, provides individual grants to interdisciplinary artists through a regionally administered subgranting program. In this way, connections between organizations committed to presenting contemporary work and the artists living in their regions are strengthened.

Inter-Arts: Touring and Commissioning Initiative (FY 85: $400,000; FY 86: $300,000). This effort is designed to assist the touring of interdisciplinary work; it is co-funded with several private foundations. Participants have included video and performance artists, and their work is reaching audiences in such localities as Cincinnati, Chicago, Pittsburgh and St. Louis. Last year, this program assisted 26 productions to tour 15 states.

Inter-Arts: Pilot Arts Management Program (FY 85: $107,000; FY 86: $100,000). This pilot effort provides support to organizations linking promising arts managers with artists and smaller arts organizations. Participants include organizations in both urban and rural settings.

Inter-Arts: Presenting Organizations/Special Constituencies (FY 85: $75,000; FY 86: $75,000). A collaboration of the Office for Special Constituencies and the Inter-Arts Program, this effort

provides grants over a two-year period to various presenting organizations undertaking exemplary efforts to reach older and disabled audiences.

Literature: Small Press Promotion (FY 85: $224,000; FY 86: $200,000). This promotion program is designed to assist small presses by creating greater demand for their books. The promotion, The Writer's Choice: the Best of the Small Presses, is modeled after the best seller list and is aimed at encouraging commercial booksellers to distribute publications of the not-for-profit small presses.

Literature: Syndicated Fiction Project (FY 85: $200,000; FY 86: $200,000). This initiative provides support for the management of a program of publication of short story writers in fifteen newspapers across the nation. This effort provides distribution outlets to writers and inexpensively puts outstanding short stories into the hands of millions of readers.

Media Arts: Children's Television Series on the Arts (FY 85: $355,000; FY 86: $1,000,000). These funds are supporting the development of a pilot television series on the arts, targeted to children age 8-10. (This initiative is co-funded with the Getty Trust.)

Music: American Conductors Program (FY 86: $50,000). This initiative, in partnership with the Seaver Institute, provides support for outstanding conductors, providing them the opportunity to conduct a range of projects to enhance their professional skills, and providing orchestras with fresh artistic vision.

Opera-Musical Theater: Artistic Associates (FY 86: $100,000). This pilot effort will support the placement of artistic associates (dramaturges, choreographers, designers, etc.) in companies to enhance the work of the company. This is the kind of alliance that enhances the vitality of a company's work, but which financial pressures often preclude.

Visual Arts: Regional Fellowships (FY 85: $250,000; FY 86: $400,000). This collaboration with several regional arts organizations (affiliations of state arts agencies) is providing grants to emerging artists that the Endowment might otherwise not reach; 79 grants have been awarded.

Locals Test Program (FY 85: $2,000,000; FY 86: $2,000,000). This test program of grants to local arts agencies has just completed its third round of grants. Based on three years of grants, some 145 local arts agencies were able to identify more than $20 million in new public funds to match the Endowment grants.

As these initiatives demonstrate, the needs in the arts are multifaceted and interrelated; Endowment dollars work to multiple effect. For example, in helping artists disseminate their work, as in the Syndicated

Fiction Project, we are also helping excellent art reach more audiences. In working with other funders, as in the Community Foundation Initiative in Expansion Arts, we are catalyzing support for the arts. In supporting the placement of an individual artist in an arts institution, as in the Opera-Musical Theater's Artistic Associates initiative, we are helping to enhance the work of the entire organization as well as supporting the artist. In trying to reach broad audiences through the media, as in the dance television series, we are helping lesser known artists establish a reputation among a national audience.

We see this "multiplier effect" in geographic terms as well. For example, on the surface, our National Performance Network appears to benefit an organization in New York City, which received a grant to organize a tour. In reality, this initiative is allowing 40 artists/companies from 12 states to reach audiences in 14 states and special jurisdictions. In a similar fashion, a grant from our Museum Program to the Minneapolis Institute of Arts supported the development of an exhibition of European painting from the Renaissance to the 19th Century located in the Tweed Museum in Duluth. The collaboration between the two museums led to a tour reaching such localities as Flint, MI, Columbus, OH, and Little Rock, AR.

In other ways, too, Endowment grants have broad geographic impact. A grant to the Educational Broadcasting Corporation in New York City assists the PBS Great Performances program to reach audiences in virtually every state in the nation. A grant to a state folk arts coordinator usually registers as a grant in a metropolitan area; but its effect is statewide, with particular emphasis on smaller towns and rural areas. Small presses, while producing small runs of books, distribute the books nationally. Even when the Endowment makes a grant to a dance company in Los Angeles specifically for the purpose of developing new work, that work eventually reaches audiences in other regions when the company takes that new work on tour, with or without Endowment support. And, of course, Endowment support to state arts agencies and regional organizations assists further the reaching of broad audiences because they use Endowment funds to support touring and presenting in their states and regions.

IV. FY 87 Budget Highlights

A. Overview

The request of $144.9 million for FY 87 will be used 1) to support the work of the nation's most excellent arts organizations and artists, 2) to support access to such work, 3) to catalyze additional funding for excellent projects and for capitalization, and 4) to fund the administrative structure to support our grant-making and leadership activities.

The allocations featured in this budget represent a balance of several needs and strategies:

- ongoing support for arts organizations, with special attention to those which face particular difficulties raising private funds,

- o provision of grants directly to individual artists, with particular emphasis on fields where creation is the work of a single individual;
- o provision of support to activities designed to bring art to broad audiences;
- o generation of capital for the best arts institutions;
- o strengthening of the Federal, regional, state and local partnership;
- o stimulation of non-Federal support for the arts;
- o support for outstanding projects whose venturesome and risk-taking qualities generate a need for special assistance; and
- o support for the personnel, panels, and other administrative elements which make possible the equitable selection from a pool of applicants of grantees who have the capacity to achieve excellence and/or provide access to, or appreciation of it.

B. Grants and Administration

1. Grants

Of the requested $117.9 million for Grants and Administration in FY 87, $103 million will be used to support outstanding artistic projects, fellowships, and activities which bring the arts to wide audiences. Program monies will support the activities of the discipline and multi-discipline Programs, as well as Partnership Programs. The remaining funds ($14.9 million) will be used to support the administrative structure which generates grants and leadership.

Virtually all of the initiatives supported in FY 85 and FY 86 (described above) will continue in FY 87. In addition, a select few new ones, generally developed in consultation with Endowment panels, will commence in FY 87:

Media Arts: Cassette Distribution ($200,000). This funding will support the availability of previously-funded television arts programs by making cassettes available for educational purposes.

Media Arts: State Arts Agency Initiative ($100,000). Only a limited number of state arts agencies currently administer media arts programs. Yet, there has been tremendous growth in the number of media art centers across the country; Endowment applications from these not-for-profit media arts organizations have more than tripled in the past five years. These funds would provide support to interested state arts agencies for developing programs of support to the media arts so that a broadened funding network is developed.

Museums: Special Artistic Initiative ($500,000). This initiative will assist museums in developing series of exhibitions, educational programs and publications, using their permanent collections over a period of two or more years. Permanent collections are often underutilized because of the relative glamour of special, imported exhibitions.

Music: Recording ($200,000). A stronger emphasis on recording would encourage more recording of American music. Funds would be directed to both not-for-profit recording companies and to performing ensembles amd artists.

Music: Orchestra Touring ($100,000). These funds will provide support to smaller major orchestras (with available services) to tour to communities not usually reached.

State Programs: Special Constituencies Symposium ($50,000). These funds will support the second national symposium on arts accessibility for special constituencies. The first such conference, in July 1983, brought together "504 coordinators" from state and local arts agencies, representatives of service organizations, artists and arts administrators active in reaching disabled, older, and institutionalized audiences and artists. The participants were able to share expertise on how to make the arts fully accessible. Such a conference in 1987 will provide an update to participants, and help create a renewed commitment to full accessibility.

2. Administration

The high quality of the National Endowment for the Arts' grant-making process and its responsiveness to the variety of arts fields it serves depend on an adequate administrative structure and the funds needed to support that structure. Our request of $14.9 million addresses these needs at a prudent level. (Note that the request of $14.9 million includes the cost of the Regional Representatives Program and the Intergovernmental Personnel Act, but is exclusive of Policy, Planning and Research, which is featured separately.)

The request of $14.9 million for FY 87 provides for some modest restoration of several activities that were reduced or eliminated in FY 86, when the agency's administrative budget was reduced vs. FY 85 -- even before the sequestration required by Gramm-Rudman-Hollings -- as a result of the 0.6 percent across-the-board cut for Interior and Related Agencies. The FY 86 budget of $14.5 million bears extra cost pressures vs. FY 85 because of a) the phase-in from the Program budget of the full cost of the Intergovernmental Personnal Act Program and b) the full-year impact of the FY 85 pay increase (vs. three-quarters of the year in FY 85). These extra pressures, combined with the 0.6 percent cut, have contributed to reductions in personnel,

panel activity, staff travel and other aspects of sustaining a credible and effective grants management process. Our proposal for FY 87 would provide for activities which have eroded during FY 86.

This restoration will cover several key areas. It will support an FTE of 258 vs. an estimated 253 FTE, pre-sequestration, in FY 86. (The 258 FTE, however, compares to 262 in FY 85 and 261 in FY 84.)

Panels, which were cut 15 percent in FY 86 (pre-sequestration) will be restored to an activity level equivalent to FY 85. Consultant contracts, which support the presence at National Council meetings of representatives from the field to present policy issues, will again be supported, making such presentations possible for every Council meeting. Staff travel funds, cut 9 percent pre-sequestration, will be restored to allow staff to enhance communication within the field, particularly in rural areas. Our Five-Year ADP Plan will be advanced, with acquisition of software and hardware which will ease the burden of managing with fewer FTE than the agency had in the first half of this decade.

In summary, the proposal of $14.9 million will provide for effective grants management through restoration of panels and sufficient FTE; it will also allow for communication to and from the fields, so necessary for leadership and for credible grants management. This level of administrative budget is essential to allowing us to provide effective grant management, to provide continuing contact with the artistic fields and the many varied regions of this country, and to meet the several new requirements mandated by the 1985 amendments to our enabling legislation.

C. Matching Grants

The Endowment requests $27.0 million in matching (indefinite) funds, which will assist in the generation of private donations to the arts.

1. Treasury Funds

The Endowment requests $9.0 million in Treasury funds. These funds, generally matched three to one, will support larger-scale projects undertaken by organizations in the performing arts fields and in the fields of media arts and museums. These funds will also support Advancement Program grantees selected in FY 84 and FY 85, who are now raising the match required in the second phase of this Program.

2. Challenge Funds

The Endowment requests $18.0 million for the Challenge Grant Program. This allocation of 12-13 percent of the Endowment's

budget is consistent with previous experience in Challeng This allocation of $18.0 million will:

- Provide for an estimated 45 grants.
- Assure a "critical mass" of Challenge funds; enough to meet a diversity of applications from the nation's most outstanding arts institutions.
- Result in an organization's chance of success in the fifth year being generally consistent with the first three years of Challenge II. The average "success ratio" (ratio of grants to applications) in the first three years of Challenge II (FY 83 through FY 85) was 25 percent, equal to our FY 87 forecast.
- Maintain the competitiveness of the program to assure support of excellence.
- Provide for generation of significant new private giving. The three-to-one match of the Challenge dollars will result in at least $54 million in new and increased giving. Based on past experience, private funds generated should be well in excess of $100 million.
- Help fill a void in the "giving ecology;" sources of funding for endowments and operating reserves are few.

V. Summary

The budget proposed maintains a visible Federal presence in the support structure for the arts in this country. At a level of $144.9 million, we can continue to exercise leadership in supporting the best of the arts, as well as access to the best. Notwithstanding the across-the-board pressures to reduce the Federal deficit, we have maintained our historic request level. It will support multiple strategies for assisting the diversity of artistic excellence in this nation, and access to, and appreciation of, that excellence.

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NATIONAL ENDOWMENT FOR THE ARTS
APPLICATION/GRANT RELATIONSHIP AND
FEDERAL APPROPRIATIONS DISTRIBUTION BY FUND TYPE
FY 1985-87
($ in thousands)

FEDERALLY APPROPRIATED FUNDS (DAF):	FY 1985					FY 1986					FY 1987				
	APPL	GRANTS	DEFINITE	INDEF	AMOUNT	APPL	GRANTS	DEFINITE	INDEF	AMOUNT	APPL	GRANTS	DEFINITE	INDEF	AMOUNT
Dance	1,131	366	8,863	200	9,063	1,139	367	8,706	300	9,000	1,150	312	7,300	300	7,600
Design Arts	860	180	4,371	0	4,371	935	153	6,200	0	6,200	956	134	3,800	0	3,800
Expansion Arts	582	467	6,439	85 t/	6,524	674	375	6,183	17 t/	6,200	512	336	5,450	50	5,500
Add'l Forward Funding	---	---	430 a/	0	430	---	---	600	0	600	---	---	---	---	---
Folk Arts	443	208	3,120	0	3,120	675	195	3,100	0	3,100	629	182	3,000	0	3,000
Inter-Arts	629	262	4,346	0	4,346	566	208	6,100	0	6,100	438	205	3,600	0	3,600
Literature	2,142	298	5,125	0	5,125	2,269	267	4,900	0	4,900	2,385	260	4,600	0	4,600
Media Arts	848	299	8,962	1,150 a/	10,112	906	237	12,215	850 a/	13,065	912	223	9,090	1,110 a/	10,200
Museums	1,291	643	11,185 b/	700	11,885	1,161	531	11,300	900 a/	12,200	1,169	387	9,100	1,200 a/	10,300
Music	2,965	899	12,194 c/	1,115	13,311	2,272	830	12,200	3,100 a/	15,300	2,380	887	9,600	3,500 a/	13,100
Opera-Musical Theater	128	173	3,953	2,000	5,953	330	181	6,100	2,000 a/	8,100	397	159	3,100	2,000 a/	5,100
Theater	928	269	10,641	0	10,641	892	261	10,700	0	10,700	820	247	9,200	0	9,200
Visual Arts	6,189	564	6,201	0	6,201	6,135	492	6,200	0	6,200	6,300	430	5,300	0	5,300
(Subtotal)	17,339	4,420	85,179	1,250	93,629	17,362	4,137	88,990	7,167	92,663	18,038	3,486	73,300	8,200	81,500
Arts in Education	237	112	5,437	0	5,437	225	110	5,300	0	5,300	236	111	4,800	0	4,800
Education	0	0	100	0	100	1	1	100	0	100	---	---	---	---	---d/
Lincoln Tent	28	13	2,256	0	2,256	21	14	2,200	0	2,200	36	12	2,200	0	2,200
State Programs	73	73	26,372	0	26,372	71	71	24,650	200 a/	24,850	84	72	21,500	0 e/	21,500
(Subtotal)	326	203	32,164	0	32,164	318	196	32,250	200	32,450	351	195	28,500	0	28,500
Advancement	109	37	674	1,570 b/	2,244	--d/	--d/	200	1,400 c/	1,600	--d/	--d/	200	800 aa/	1,000
Challenge	149	50	0	20,380 i/	20,380	151	69	0	20,457 a/	20,457	180	45	0	18,000 ab/	18,000
(Subtotal)	258	87	674	22,150	22,824	151	69	200	21,857	22,057	180	45	200	18,800	19,000
Policy, Planning & Research	257	83	1,900 a/	0	1,900	238	69	974	0	974	363	69	1,000 i/	0	1,000
Administration	---	---	16,602 a/	0	16,602	---	---	16,516 a/	0	16,516	---	---	16,900 a/	0	16,900
Total @ Grants & Applications	18,178	4,893				18,469	4,451				18,922	4,135			
Total - Grants and Administration			136,241					136,437					117,900		
				29,400					29,226					27,000	
Total - Matching Grants					162,845					165,663 a/					144,900
Grand Total															

a/ FY 86 does not reflect the 4.3 percent reduction pursuant to the Balanced Budget and Emergency Deficit Control Act of 1985. Footnotes are on page 12.

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FOOTNOTES TO CHART ON PAGE 11 (S in thousands)

a/ Excludes $190 of no-year Program funds.
b/ Excludes $2 of no-year Program funds.
c/ Excludes $1 of gift funds.
d/ Excludes $99 of no-year Administrative funds and $60 of no-year Program funds; includes $40 of FY 85 Program funds and $5 of unobligated FY 85 Administrative funds.
e/ Includes $31 of unobligated FY 85 Administrative funds; excludes $109 from HEW for 30 percent of PCAH expenses, $5 from Dept. of Energy reimbursement, and $30 of no-year funds.
f/ Includes $35 of FY 85/86 Treasury funds carried into FY 86.
g/ Includes $200 of FY 85/86 Treasury funds carried into FY 86.
h/ Excludes $1,661 of FY 84/85 Treasury funds; includes $1,520 of FY 85/86 Treasury funds carried into FY 86.
i/ Excludes $20,631 of FY 84/85 Challenge funds; includes $20,473 of FY 85/86 Challenge funds carried into FY 86.
j/ Awards will be amendments to grants made in prior years, therefore no new applications or grants are shown.
k/ Excludes $113 from HEW for 30 percent of PCAH expenses.
l/ Excludes $35 of FY 85/86 Treasury funds.
m/ Excludes $200 of FY 85/86 Treasury funds; includes $400 FY 86/87 Treasury funds carried into FY 87.
n/ Includes $100 FY 86/87 Treasury funds carried into FY 87.
o/ Includes $100 FY 86/87 Treasury funds carried into FY 87.
p/ Includes $100 FY 86/87 Treasury funds carried into FY 87.
q/ Includes $100 FY 86/87 Treasury funds carried into FY 87.
r/ Excludes $1,520 of FY 85/86 Treasury funds; includes $1,395 of FY 86/87 Treasury funds carried into FY 87.
s/ Excludes $20,473 of FY 85/86 Challenge funds; includes $20,300 of FY 86/87 Challenge funds carried into FY 87.
t/ Included in Program funds.
u/ Excludes $114 from HEW for 30 percent of PCAH expenses.
v/ Excludes $400 of FY 86/87 Treasury funds.
w/ Excludes $100 of FY 86/87 Treasury funds.
x/ Excludes $100 of FY 86/87 Treasury funds.
y/ Excludes $100 of FY 86/87 Treasury funds.
z/ Excludes $100 of FY 86/87 Treasury funds.
aa/ Excludes $1,395 of FY 86/87 Treasury funds.
ab/ Excludes $20,300 of FY 86/87 Challenge funds.
ac/ Included in AIE/Arts in Education.

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FY 1986 SEQUESTER

For FY 86 the National Endowment for the Arts is funded under the Omnibus Budget Act, in which agencies under the U.S. Department of Interior Appropriation sustained a 0.6 percent reduction from the Budget Authority recommended in the Appropriations Committee Conference Report. For the Arts Endowment, a 0.6 percent reduction from a Budget Authority of $166.66 million equaled $1 million. Thus, the FY 86 Sequester Order under the Gramm-Rudman-Hollings (G-R-H) Act was applied to a base of $165.661 million.

The G-R-H Sequester Order issued on February 1, 1986, reduces the Arts Endowment's Budget Authority by 4.3 percent, or $7.123 million. The Sequester Order applies to all Programs, Projects and Activities as defined in the Appropriation and supporting Appropriations Committee reports. The distribution of the 4.3 percent reduction, with a resultant Budget Authority of $158.538 million, is shown in the accompanying chart. Grants and Administration will be reduced by $5.866 million, Matching Grants by $1.257 million. Reductions were applied to every Program; the uniform distribution places serious operational constraints on Administrative funds.

I. Grants and Administration

A. Program Accounts

The Sequester Order reduces overall Budget Authority in the Program accounts by $4.149 million and the State Programs component by $1.052 million. Although funds available for grant awards will decrease, we do not expect an appreciable reduction in the number of applications for those funds. Programs will deal with the reductions by a combination of making fewer grants and/or smaller grants. Overall, we anticipate approximately a three percent reduction in the total number of grants awarded. Since State Programs cannot award fewer grants to state arts agencies, average grant amounts will be reduced.

B. Administrative Accounts

The operating Administrative accounts would be reduced by a sequester of $624,000. We have already implemented major efforts to meet the target reduction. We imposed a virtually complete hiring freeze to reduce FTE. Funds for staff travel will be cut more than 40 percent vs. FY 85. Similarly, panel costs will now be cut a total of 15 percent. We will delay ordering certain equipment to effect some savings which will, in turn, delay the development and implementation of our ADP system in FY 86. We are taking steps to reduce printing costs within constraints created by GPO contracting limitations.

If these actions do not generate sufficient savings, we will consider actions which would further reduce personnel compensation. We anticipate a need to reach approximately 245 FTE (a 6.5 percent reduction vs. FY 85 and 5.1 percent below the level the administration is proposing for FY 87).

In the Office of Policy, Planning and Research, we will reduce the number of grants funded and perhaps defer some research projects.

II. Matching Grants

Matching Grants will be reduced $1.257 million, of which Challenge will be reduced by $880,000. The result will be a reduction in the total number of Challenge grants awarded. Treasury funds are allocated to various programs and, therefore, the overall effect will be similar to that within the program areas -- i.e., in some cases a modest reduction in the number of grants, and in other cases a reduction in grant amounts. Given the high matching requirements of Challenge and Treasury grants, some reduction in the generation of private donations to the arts could result.

Summary

We support the commitment to reduce the Federal deficit and will make adjustments to implement the sequester with minimum disruption in services to the public.

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National Endowment for the Arts
FY 86 Appropriation and Gramm-Rudman-Hollings Sequester
($ in thousands)

PROGRAM, PROJECT, ACTIVITY	FY 86 BA ENACTED	FY 1986 APPROPRIATION LESS .6%	4.3% G-R-H REDUCTION	FY 1986 NET BUDGET @ $158,538
GRANTS AND ADMINISTRATION				
Program Grants:				
AIE/Arts in Education	5,341	5,309	(228)	5,081
Education	98	97	(4)	93
Dance	8,900	8,847	(380)	8,467
Design Arts	4,312	4,286	(184)	4,102
Expansion Arts	6,713	6,673	(287)	6,386
Folk Arts	3,000	2,982	(128)	2,854
Inter-Arts	4,000	3,976	(171)	3,805
Literature	5,145	5,114	(220)	4,894
Media Arts	12,065	11,993	(516)	11,477
Museums	11,370	11,302	(486)	10,816
Music	12,310	12,236	(526)	11,710
Opera-Musical The.	4,267	4,241	(182)	4,059
Locals Test	2,200	2,187	(94)	2,093
Theater	10,880	10,815	(465)	10,350
Visual Arts	6,272	6,234	(268)	5,966
Advancement	200	199	(9)	190
(Subtotal Program Grants)	97,073	96,491	(4,149)	92,342
State Programs	24,605	24,457	(1,052)	23,405
(Subtotal Grants)	121,678	120,948	(5,201)	115,747
Administrative Areas:				
Policy, Planning & Research	980	975	(42)	933
Administration	14,602	14,514	(624)	13,890
(Subtotal Administrative Areas)	15,582	15,489	(666)	14,823
Total Grants and Administration	137,260	136,437	(5,867)	130,570
MATCHING GRANTS				
Matching Grants	8,820	8,767	(377)	8,390
Challenge Grants	20,580	20,457	(880)	19,577
Total Matching Grants	29,400	29,224	(1,257)	27,967
Total, Arts Endowment	166,660	165,661	(7,123)	158,538

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NATIONAL ENDOWMENT FOR THE ARTS

DANCE PROGRAM

APPLICATION/GRANT RELATIONSHIP & FUNDING IMPACT: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

	FY 1985			FY 1986			FY 1987		
CATEGORY	APPL	GRANTS	AMOUNT	APPL	GRANTS	AMOUNT	APPL	GRANTS	AMOUNT
CHOREOGRAPHERS' FELLOWSHIPS	638	107	678	656	89	700	650	90	600
DANCE COMPANY GRANTS	217	108	5,757	215	117	5,800	220	100	5,200
DANCE/FILM/VIDEO	96	24	302	102	14	250	80	10	200
GENERAL SERVICES TO THE FIELD	68	45	623	70	43	500	75	40	450
GRANTS TO DANCE PRESENTERS	95	68	948	101	71	1,100	110	60	700
SPECIAL PROJECTS a/	17	14	694	15	13	650	15	12	450
PROGRAM TOTAL	1,131	366	9,003	1,159	347	9,000	1,150	312	7,600

CATEGORY DISTRIBUTION BY FUND TYPE: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

	FY 1985			FY 1986			FY 1987		
CATEGORY	DEFINITE	INDEF	TOTAL	DEFINITE	INDEF	TOTAL	DEFINITE	INDEF	TOTAL
CHOREOGRAPHERS' FELLOWSHIPS	678	0	678	700	0	700	600	0	600
DANCE COMPANY GRANTS	5,557	200	5,757	5,500	300	5,800	4,900	300	5,200
DANCE/FILM/VIDEO	302	0	302	250	0	250	200	0	200
GENERAL SERVICES TO THE FIELD	623	0	623	500	0	500	450	0	450
GRANTS TO DANCE PRESENTERS	948	0	948	1,100	0	1,100	700	0	700
SPECIAL PROJECTS a/	694	0	694	650	0	650	450	0	450
PROGRAM TOTAL	8,803	200	9,003	8,700	300	9,000	7,300	300	7,600

a/ Includes support for a cooperative effort among Dance, Inter-Arts and State Programs to address presenting/touring needs.

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DANCE

Purpose

The purpose of the Dance Program is to further the excellence and creativity of dance and make it available to the widest possible public. The Program assists 1) dance companies; 2) choreographers; 3) presentation of dance companies and artists; 4) documentation and film/video projects; 5) service organizations; and 6) special initiatives to stimulate creativity, interest in and access to dance.

Needs and Opportunities in the Field

The field of dance continues to be characterized by creative vigor and managerial resourcefulness. Choreographers are crossing the historic boundaries from modern dance to reinvigorate the repertoire of ballet companies. Energetic marketing, collectives for booking and touring and professional fund raising have helped stabilize and improve the financial condition of many companies, while others continue to experience the growing pains of a youthful field.

Artistic and financial stabilization continue to be dance organizations' most critical needs; access to trained dancers, adequate facilities and having time to create new work are most crucial to choreographers.

Many dance companies and independent choreographers have difficulty meeting expenses. Adequate space for rehearsal and performance is expensive; few companies and virtually no choreographers control their own space. Although some choreographers prefer to work independently, many are forced to do so because they lack the substantial financial resources necessary to pay for performance and rehearsal space and dancers' salaries on a regular basis.

High costs make it difficult for companies to take risks on new work and/or new choreographers. Recouping expenses through ticket sales for new work is much less predictable than for familiar repertoire. As an average, grantee companies employed their dancers for 32 to 36 weeks per year during the 1983-84 season which translates to an average annual income of $7,500 for modern dancers and $16,000 for ballet dancers, an increase from previous years. A dancer's career is shorter than other artists, and there is a need to assist them in career transition. Touring, though expensive, is essential to provide companies with performance opportunities and to attract new audiences for companies and presenters alike. Companies report increases in touring in the 1984-85 season, both in income and number of performances.

Preservation of dance of the past on film or videotape and through notation continues to be a concern of the field. Many important works and performances are in danger of being lost to future generations. A new television series, Alive From Off Center, is helping to build new audiences. The series, which premiered this past season and received very positive reviews, included the work of many important dance artists and is the first major series involving dance to have been initiated since 1976.

Program Response and Category Descriptions

The Program's flexible support enables it to respond to the individual needs of dance organizations and artists, so they can choose the most effective means to develop themselves artistically and financially.

The Program continues to cooperate with the Inter-Arts and State Programs on the presenting/touring initiative. Also in FY 85 it supported the second year of the National Choreography Project which increased opportunities for the creation of new choreography. To date it has supported 17 large repertory companies to work with choreographers new to them, setting an example which has already stimulated a sustained interest among artistic directors. The Program has begun an initiative for the production of a television series for dance companies and artists not previously seen by television audiences, and a touring initiative which provides more performance opportunities for small companies and individual dance artists. A grant was awarded to begin a special study on dancers' career transition.

1. Choreographers' Fellowships

Grants in this category (awarded at levels of $12,000, $8,000 or $5,000) assist choreographers in the creation of new works, collaborations with other artists, and experimentation with new techniques. In FY 87 we anticipate awarding 90 grants out of 650 applications aggregating $600,000 vs. 89 grants out of 656 applications aggregating $700,000 awarded in FY 86.

Example: In FY 84 a fellowship of $12,000 was awarded to legendary tap dancer, Charles "Cookie" Cook, from New York City to assist him in producing a performance of both newly choreographed jazz/tap work and revivals of older pieces, including the participation of other legendary tap artists such as Chuck Green, Ernest "Brownie" Brown, Mabel Lee and the late Leon Collins. The performance, which took place at the City College of New York, was attended by nearly 300 people and, in addition, was videotaped and is now available to the public for viewing. Mr. Cook is one of the few great remaining tap dance exponents from its golden age in the 1930's and his current work is contributing significantly to the preservation and revival of this important American art form.

2. Dance Company Grants

This category assists the best professional dance companies with their artistic and managerial activities both at home and on tour. In FY 87 we anticipate awarding 100 grants out of 220 applications aggregating $5,200,000 vs. 117 grants out of 215 applications aggregating $5,800,000 awarded in FY 86.

Example: In FY 84 a grant of $173,508 was awarded to Ballet West in Salt Lake City, UT which helped make possible the revival of August Bournonville's evening-length ballet "Abdallah." Originally created for the Royal Danish Ballet in 1855, the piece soon thereafter disappeared from the repertoire. Using Bournonville's own handwritten scenario and notes on the ballet, Ballet

West's artistic staff reconstructed and staged the piece and presented it in Salt Lake City in February 1985. This production, which was repeated on tour later in the year in Ogden, UT, Tempe, AZ and Washington, DC, represented the work's first performance in 127 years. Not only did this project present a unique challenge to artistic staff and dancers, but it has enabled audiences around the country to see a masterpiece which would otherwise have remained lost. The revival was so successful that the Royal Danish Ballet is now negotiating with Ballet West to arrange for the production to be taught to its dancers and put back in its repertoire.

3. Dance/Film/Video

Grants in this category assist dance companies, other organizations and individuals who use film or video to advance the art of dance or to preserve and document dance works. In FY 87 we anticipate awarding 10 grants out of 80 applications aggregating $200,000 vs. 14 grants out of 102 applications aggregating $250,000 awarded in FY 86.

Example: In FY 85 Jacob's Pillow Dance Festival in Lee, MA was awarded $9,000 to produce, from original film footage, a videotape of Ted Shawn's "Men Dancers" to be synchronized with the original music and made available to the public. Choreographer Ted Shawn and his dance company had a significant influence on the development of modern dance in this country, but until now his work has been virtually inaccessible to the public. The stereo sound videotapes resulting from this project present the most complete look at these dance works in more than 40 years.

4. General Services to the Field

Grants in this category assist organizations and individuals who provide services to dance companies, dancers and choreographers. Emphasis is placed on projects which increase financial and managerial stability, increase communication within the dance community, increase visibility and public awareness of dance, or provide performance space and services to companies and individuals. In FY 87 we anticipate awarding 40 grants out of 75 applications aggregating $450,000 vs. 43 grants out of 70 applications aggregating $500,000 awarded in FY 86.

Example: In FY 85, a $2,000 grant was awarded to the Dance Center at Columbia College in Chicago, IL. In addition to teaching and presenting dance, the Dance Center offers Chicago-area dance companies low-cost rental of its 225 seat theater for rehearsal and performance, as well as an extensive range of technical support services for each production. This grant helped the Center develop its rental-service package even further to include free documentary videotaping of the renter's program during performance, sound recording and duplication as needed for specific dance concerts at the Center, and an up-to-date mailing list of 15,000 names, on labels, provided at no charge. All these services enhanced the technical proficiency and public visibility of the artists who were able to offer 34 evenings of dance at the Center during the season for which the grant was made.

5. Grants to Dance Presenters

This category is designed to encourage and assist experienced presenters with the presentation of professional dance events of the highest quality. Support is available for dance presentations involving three or more professional dance companies or artists, or for long-term engagements of two or more weeks. In FY 87 we anticipate awarding 60 grants out of 110 applications aggregating $700,000 vs. 71 grants out of 101 applications aggregating $1,100,000 awarded in FY 86.

Example: In FY 83 On The Boards in Seattle, WA was awarded a grant of $5,000 to support a residency of Kei Takei's Moving Earth as a part of its 1983-84 New Performance Series. The Series brings to Seattle avante-garde and non-traditional dance artists who have not been previously seen in Seattle and have generally not been seen in the Northwest. The organization reports that the series in 1983-84 was particularly successful; the subscription base doubled and extra performances were added due to audience demand. This is the only presenter of its sort in the Northwest and it is extremely important to audiences and artists in the region.

6. Special Projects

This category supports special initiatives and unique projects which could serve as prototypes for the dance field. In FY 87 we anticipate awarding 12 grants out of 15 applications aggregating $450,000 vs. 13 grants out of 15 applications aggregating $650,000 awarded in FY 86.

Example: In FY 84 the Dance Theater Workshop in New York City was awarded a grant of $100,000 to support a dance component of the National Performance Network, a program which links independent performing artists and small emerging companies with presenting spaces in Massachusetts, New York, Pennsylvania, the District of Columbia, Georgia, Minnesota, Illinois, Ohio, Louisiana, Texas, Colorado, Washington and California. The program in its first year enabled fourteen spaces to schedule a total of fifty-six one and two week residencies of forty artists/companies for presentation during the 1985-86 season. In addition to increasing performance opportunities for these artists and enabling the spaces to increase their presentations, this project has developed new audiences and raised the national visibility of both the artists and presenters involved.

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NATIONAL ENDOWMENT FOR THE ARTS

DESIGN ARTS PROGRAM

APPLICATION/GRANT RELATIONSHIP & FUNDING IMPACT: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

	FY 1985			FY 1986			FY 1987		
CATEGORY	APPL	GRANTS	AMOUNT	APPL	GRANTS	AMOUNT	APPL	GRANTS	AMOUNT
DESIGN ADVANCEMENT	...	...	...	...	...	...	875	137	2,900
DESIGN COMMUNICATION	224	52	1,270	250	33	1,150	...	...	...
DESIGN DEMONSTRATION	190	54	1,436	220	49	1,250	...	...	...
DESIGN EXCELLENCE	19	19	722	40	14	850	...	...	...
DESIGN EXPLORATION/RESEARCH	68	12	352	75	16	450	...	...	...
DESIGN FELLOWSHIPS	339	43	591	350	41	500	38	6	100
DESIGN GRANTS TO STATE & REGIONAL ARTS AGENCIES	...	...	...	...	...	...	15	6	90
DESIGN INITIATIVES	...	...	...	...	...	...	28	7	650
PROGRAM TOTAL	840	180	4,371	935	153	4,200	956	156	3,800

CATEGORY DISTRIBUTION BY FUND TYPE: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

	FY 1985			FY 1986			FY 1987		
CATEGORY	DEFINITE	INDEF	TOTAL	DEFINITE	INDEF	TOTAL	DEFINITE	INDEF	TOTAL
DESIGN ADVANCEMENT	...	...	...	...	...	...	2,900	0	2,900
DESIGN COMMUNICATION	1,270	0	1,270	1,150	0	1,150	...	...	...
DESIGN DEMONSTRATION	1,436	0	1,436	1,250	0	1,250	...	...	...
DESIGN EXCELLENCE	722	0	722	850	0	850	...	...	...
DESIGN EXPLORATION/RESEARCH	352	0	352	450	0	450	...	...	...
DESIGN FELLOWSHIPS	591	0	591	500	0	500	100	0	100
DESIGN GRANTS TO STATE & REGIONAL ARTS AGENCIES	...	...	...	...	...	...	90	0	90
DESIGN INITIATIVES	...	...	...	...	...	...	650	0	650
PROGRAM TOTAL	4,371	0	4,371	4,200	0	4,200	3,800	0	3,800

DESIGN ARTS

Introduction

For FY 87, the Design Arts Program proposes a new set of grant categories and leadership initiatives which represent a continuing evolution of the Program. Begun in 1966, the Program set out to help individuals, communities, and institutions recognize and support design excellence and talent.

In the 1970's the Program introduced "topical" grant categories focused on urban issues: City Edges, City Limits, City Options, and Livable Cities. At the same time it undertook an aggressive program of leadership in the field under the heading of Design Excellence: improving the quality of design within the Federal government, conserving inner-city neighborhoods, and supporting historic preservation. This approach established a pattern of awarding grants in response to published guidelines, and a pattern of conducting specific, short-term initiatives to stimulate communication on issues of design excellence in the field.

In the 1980's the Program's evolution continued. To be more accessible to the field, "generic" grant categories were created. These categories focused on basic design activities (communication, demonstration, and exploration/research) rather than topical issues such as City Edges, described previously. At the same time, Program policy on leadership initiatives was the subject of a 1982 Endowment seminar of design leaders, including I M. Pei, Philip Johnson, and Niels Diffrient, among others. The recommendations endorsed the Endowment's role as a catalyst in the field.

For FY 87, the Program continues its evolutionary development by combining the generic grant categories of communication, demonstration, and exploration/research into a single category titled Design Advancement. This change is intended to eliminate separations between design activities as represented in the current FY 86 guidelines. Designers are beginning to recognize the importance of different disciplines merging in collaboration to address complex design issues. It is hoped Design Advancement will encourage more multi-disciplinary projects among designers, and foster collaborations between designers and other artists. The following chart illustrates how FY 86 generic grant categories, fellowship categories, and the Design Excellence category have been incorporated into the Design Advancement category and other FY 87 categories:

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FY 86		FY 87
Design Communication Design Demonstration Design Exploration/Research Individual Project Grants	-------	1. Design Advancement
Entering Professional Designer Fellowships Distinguished Designer Sabbatical Fellowships	-------	2. Design Fellowships
	-------	3. Design Program Grants to State and Regional Arts Agencies
Design Excellence	-------	4. Design Initiatives

Purpose

The Design Arts Program encourages excellence in the design of cities and towns, buildings and landscapes, graphics that inform us, and products we use. It supports projects that promote better public understanding of design; produce new designs; nurture design talent; and improve the techniques and practices that produce quality in design. The Program's purpose is to improve design quality, not because this will make design more marketable or fashionable, but because it will make design better.

Needs and Opportunities in the Field

While reviewing the Endowment's Five-Year Planning Document and developing the FY 87 Design Arts guidelines, a number of knowledgeable individuals in the field cited needs and opportunities critical to the Program's evolution.

The last decade has seen tremendous growth in public awareness of design and its effect on our culture. Americans increasingly resist bad design: bleakness in cities, products that do not work, and public buildings that fail to inspire. As a result, the need has never been greater to address the design issues of our time: to conserve and enhance the best aesthetic qualities of our cities, neighborhoods, suburbs, and towns; to understand and communicate better the nature of design excellence; to encourage inquiry and exploration into emerging technology and developing areas such as landscape architecture, graphic design, and product design; and to support public and private sector efforts and partnerships to produce excellence.

Designers, historically separated by discipline, artistic intention, and professional practices, are beginning to work across traditional boundaries to address the multi-dimensional issues which comprise the Design Arts. The emerging collaborative environment creates important opportunities for the development of multi-disciplinary projects which have the best chance of meeting the need for excellence.

Program Response and Category Descriptions

For FY 87, the Program proposes a modified structure of grant categories and leadership initiatives which continues the Program's evolution in response to issues in the field. Our recent Program review yielded consensus on two issues: 1) the existing generic grant categories need to be simplified and made more receptive to inter-disciplinary collaborations rather than divided by specific activity, and 2) the Program should re-emphasize the design of cities as a priority.

The new Program structure will include three categories of funding for grants, and one category for funding leadership initiatives. This approach is consistent with the Program's historical pattern of supporting grant categories in response to published guidelines, and a pattern of conducting specific, short-term initiatives aimed at facilitating the communication of design issues in the field.

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1. Design Advancement

This category encompasses all of the concerns of the old Design Communication, Design Demonstration, Design Exploration/Research, and Individual Project Grant categories. It also makes grants for projects that combine these activities. It supports projects involving design practice, media, theory and research, and education about design. Applications are invited from all of the design disciplines: architecture, landscape architecture, urban design, historic preservation, planning, interior design, industrial design, graphic design and fashion design. The category supports interdisciplinary projects -- combining, as required, planning and design activities; communications activities such as workshops, exhibits, and audiovisual presentations; or experimental and innovative research activities.

Within the Design Advancement grant category, the guidelines will announce a National Theme: Design of Cities. This is not a separate grant category, but an effort to encourage applicants to consider design problems in cities and towns as a topic for their grant applications.

In FY 87, we anticipate awarding 137 grants out of 875 applications aggregating $2,900,000 vs. 134 grants out of 868 applications aggregating $3,230,000 awarded in FY 86.

Example - Design Communication: In FY 84 a grant of $40,000 was awarded to the Whitney Museum of American Art in New York City to produce an exhibition: "High Styles: Twentieth-Century American Design." The exhibit, which opened in September 1985 and will continue through February 1986, focuses on the significant contributions of 20th-century American architects and designers and identifies design qualities that are distinctly American. It presents the first survey of 20th-century American design, and represents the Whitney Museum's most extensive exhibition effort in the area of decorative art. Installed in the museum's largest exhibition space, to date the exhibit has been viewed by more than 72,000 persons. It has also generated broad discussion about the nature of American design.

Example - Design Demonstration: In FY 84, a grant of $84,930 was awarded to the City of Escondido, CA, to conduct a national architecture and urban design competition for a new civic center to include a city hall, a 1,500 seat theater, an art museum, and a redesigned city park. Over 100 professional firms entered. As a direct result, the city held a bond referendum for $52 million, which the voters decisively approved. On November 9, 1985, ground was broken for the construction of the new city hall. Recently Mayor Ernie Cowan wrote the Endowment: "We are so completely pleased with the results of the design competition. The community is enthusiastic about the winning plan..... You have been a major part in making a dream and a future for an entire community come true." This project has received numerous awards and recognition: articles in magazines such as Architectural Record, California Architecture, and Progressive Architecture, as well as awards from the San Diego Chapters of the American Institute of Architects and the American Institute of Planners. City Manager Vernon Hazen stated that "the unexpected bonus directly related to the competition was community involvement and acceptance. This turned out to be more important than our main objective, and you know how pleased we are with the design."

Example - Design Exploration/Research: In FY 83, a grant of $39,132 was awarded to the University of Southern California in Los Angeles, for an investigation into the design of outdoor spaces for the elderly. As the population ages, the needs of the elderly present new challenges to the design professions. This study, which will soon be published, uses sophisticated computer techniques to develop specific design criteria to create well designed, high quality, outdoor environments for the elderly. As our population ages, requirements for designing both passive and active outdoor facilities are being reassessed by design professionals. Generic designs, adaptable to all ages and needs, do not work. This project addresses the need to identify designs against which quality in outdoor facilities can be measured, understood, and evaluated against the specific needs of our elderly population.

Example - Individual Project Grant: In FY 83 a grant of $9,160 was awarded to T. Allan Comp of Seattle, WA, to complete work on a preservation study of Virginia City, NV, a National Historic Landmark. The study focused on how to retain artistic values while allowing necessary development within a historic townscape. The project resulted in design guidelines for new facilities and the rehabilitation of old ones; it included ideas for street furnishing, signage, zoning and the sympathetic development of public spaces. As a result of this study, the city has spent $30,000 on related projects, such as an inventory of every building in Virginia City, a series of detailed block design studies, and the production of a management plan to complete the proposed work.

2. Design Fellowships

Fellowships will be provided to outstanding individuals who have made substantial lifetime contributions to the design field and to organizations which provide design fellowships.

In FY 87, we anticipate awarding 6 grants out of 38 applications aggregating $160,000 vs. 5 grants out of 27 applications aggregating $120,000 awarded in FY 86 under the Design Fellowships category.

Example - Distinguished Designer Fellowship: In FY 82 a grant of $15,000 was awarded to Ray Eames of Los Angeles, CA, to complete a book that will provide full documentation, including photographic illustrations, of the work of the Office of Charles and Ray Eames. The book will serve as a reference to the complete Eames collection of papers, negatives, slides and film -- a collection to be housed in the Library of Congress. The work of Charles and Ray Eames is regarded as some of the most creative and productive design work of the 20th century in architecture, graphic design, interior design, and product design. The complete record of their work will be invaluable to students and practitioners.

Example - Grants to Organizations Awarding Design Fellowships: In FY 84 a grant of $25,000 was awarded to Harvard University, Cambridge, MA, for the Loeb Fellowship Awards. These provide stipends for four to six design practitioners each year. Based in the Harvard Graduate School of Design, the program selects mid to senior career design and planning professionals for a semester or year of independent study, with full access to Harvard's courses and facilities.

With this grant, the fellowship program has been encouraged to recruit women, minorities and handicapped persons, groups traditionally underrepresented in the field of design.

3. Design Program Grants to State and Regional Arts Agencies

These grants support planning efforts by state and regional arts agencies to develop design arts programs.

In FY 87 we anticipate awarding 6 grants out of 15 applications aggregating $90,000 vs. 5 grants out of 12 applications aggregating $75,000 awarded under a similar effort initiated in FY 86.

Example: In FY 83, the Ohio Arts Council received a grant of $21,720 to conduct a statewide design awareness and technical assistance program in conjunction with the Ohio Humanities Council. This effort helped substantiate a formal design arts program within the Ohio Arts Council supported with state funds. At the time, Ohio was one of only two states conducting design arts programs. Since this grant, Ohio has expanded its program of providing designers to municipalities, improving the quality of graphic design within the state, and facilitating public education on design. Ohio serves as a model for other states contemplating the creation of design arts programs.

4. Design Initiatives

These initiatives are short-term projects, initiated by the Endowment in response to needs in the field. They are intended to facilitate communication on issues of national and regional interest, and to act as a catalyst in developing a greater understanding of techniques and practices that produce design quality.

In FY 87 we anticipate awarding 7 grants out of 28 applications aggregating $650,000 vs. 14 grants out of 40 applications aggregating $850,000 awarded in FY 86 under the Design Excellence category.

Example: In FY 84 the Program administered the First Presidential Design Awards Program, initiated by President Reagan to recognize exemplary design achievements in Federal architecture, interior design, product/industrial design, and urban design and planning. In January 1985 President Reagan presented certificates to 13 projects winning the Presidential Design Award. Ninety-one Achievement Awards were also selected from over 600 submissions entered, ranging from the design of postage stamps to regional flood control projects. An exhibition on the award winners is in circulation. In presenting the awards, the President remarked, "...today's awards prove that inspired design, the genius that makes ordinary things work well and look beautiful, is possible from within the Federal ranks, and that's exactly what today's winners have given us."

NATIONAL ENDOWMENT FOR THE ARTS

EXPANSION ARTS PROGRAM

APPLICATION/GRANT RELATIONSHIP & FUNDING IMPACT: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

	FY 1985			FY 1986			FY 1987		
CATEGORY	APPL	GRANTS	AMOUNT	APPL	GRANTS	AMOUNT	APPL	GRANTS	AMOUNT
CITY ARTS	0	0	355	...	...	...	...	...	...
EXPANSION ARTS ORGANIZATIONS a/	471	366	5,471	417	338	5,550	450	300	4,300
SERVICES TO THE FIELD	25	20	502	32	20	450	40	19	400
SPECIAL PROJECTS	18	13	626	25	17	800	22	17	800
PROGRAM TOTAL	522	407	6,954	474	375	6,800	512	336	5,500

CATEGORY DISTRIBUTION BY FUND TYPE: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

	FY 1985			FY 1986			FY 1987		
CATEGORY	DEFINITE	INDEF	TOTAL	DEFINITE	INDEF	TOTAL	DEFINITE	INDEF	TOTAL
CITY ARTS	355	0	355	...	...	...	...	...	...
EXPANSION ARTS ORGANIZATIONS a/	5,386	85	5,471	5,533	17	5,550	4,250	50	4,300
SERVICES TO THE FIELD	502	0	502	450	0	450	400	0	400
SPECIAL PROJECTS	626	0	626	800	0	800	800	0	800
PROGRAM TOTAL	6,869	85	6,954	6,783	17	6,800	5,450	50	5,500

a/ In FY 85, excludes $190 of no-year Program (Definite) funds; includes $33 of FY 85/86 Treasury (Indefinite) funds carried into FY 86; includes $430 for additional forward funding. In FY 86, excludes $33 of FY 85/86 Treasury (Indefinite) funds; includes $600 for additional forward funding.

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EXPANSION ARTS

Purpose

The function of Expansion Arts is to aid the development of high quality art in minority, inner-city, rural, or tribal communities. Expansion Arts support helps stabilize organizations deeply rooted in, and reflective of, one of these communities so that they can attract additional contributions from public and private sources. Thus the Program broadens understanding of the variety of American aesthetics and provides access to a wider range of quality artistic expression.

Needs and Opportunities in the Field

The most pressing needs of the Expansion Arts field are: to continue to develop new work; to increase audiences; to gain broader recognition for artistic work; to identify and secure new funding sources, particularly in the private sector; to obtain resources to strengthen administrative capability; and to enable organizations to improve their facilities.

In order to sustain the quality of its art and to reach even larger audiences within and without its communities, the Expansion Arts field would benefit from expansion of its funding base. In particular, the field needs greater access to private donors. Many individual philanthropists, businesses and foundations which contribute to the arts are reluctant to become involved in one-on-one funding relationships with a large number of small arts organizations because they lack the resources to evaluate such a potentially large applicant pool.

Program Response and Category Descriptions

Most Program funds will continue to be used by Expansion Arts organizations to create and exhibit art and provide training opportunities for the talented. The budgetary item most often supported in the Program's grants is artists' fees, assisting artists in the field to maintain their creative productivity. The Program's guidelines now also allow support for the improvement of administrative stability. For FY 86 more than one-third of the applicants to the Expansion Arts Organizations category included requests for administrative support. Organizations that have shown consistent artistic achievement and diversity of financial support may be awarded grants to reinforce their administrative stability. Generally these grants are awarded annually for a maximum of two to three years with the expectation that the improvement in the organization's management capacity will be reflected in its fund raising. This enhancement of long-term stability provides a more conducive climate for continued artistic advancement.

The Special Projects/Community Foundation Initiative (CFI), which awarded its first grants in FY 85, will continue to serve as a magnet for donors who would rather make one major contribution to the Expansion Arts field than respond to each applicant directly. The CFI creates an endowment within the community

foundation restricted to the support of emerging and minority arts organizations. The CFI has many merits: 1) it offers a review mechanism using panels with the expertise to judge the artistic quality and stability of applicants, 2) it eases the risk implicit in the funding of emerging organizations because donors contribute to a permanent endowment rather than to a particular organization, 3) it attracts contributions such as deferred gifts or real property which are sometimes difficult for smaller organizations to make use of, and 4) it creates a working relationship between local and/or state arts agencies and community foundations. This model has proved so attractive that the Department of Health and Human Services is adapting it for their program needs.

The Program is collaborating with the President's Committee on the Arts and the Humanities and the African American Museums Association in developing a survey and conservation program for the arts holdings of historically black colleges and universities. These collections are significant because they include much of the 20th-century art work of noted black artists which heretofore may not have been cataloged, exhibited and/or preserved. The Program anticipates collaboration with the Museum Program to support the conservation and exhibition phases of the project once the works have been inventoried.

Expansion Arts funding is available through three categories: Expansion Arts Organizations, Services to the Field and the Special Projects/Community Foundation Initiative.

1. Expansion Arts Organizations

Funds are provided for arts organizations deeply rooted in and reflective of a minority, inner-city, rural or tribal community for performances, exhibitions and professional training. This is the Program's central category and it accounted for 90 percent of total grants awarded in FY 86. In FY 87 we anticipate awarding 300 grants out of 450 applications aggregating $4,300,000 vs. 338 grants out of 417 applications aggregating $5,550,000 awarded in FY 86.

Example: In FY 85 a grant of $32,500 was awarded to the Museum of the National Center of Afro-American Artists in Boston, MA, to support several programs which enhanced the career development and visibility of numerous black artists who are deserving of national recognition. The Museum presented nine exhibitions in its main gallery featuring artists who, despite the historical importance of their work, have had little museum exposure. Work by some of the pillars of 20th-century Afro-American art created between 1925 through 1975 were represented, including renowned printmaker John Biggers and painters Hughie Lee-Smith and Charles Allston. In addition, four exhibitions within the special exhibitions galleries featured a variety of one-person and group shows of black contemporary professional artists who are just now achieving prominence in the general art world. The Museum's audience totaled more than 12,000 during this year, an increase of 2,000 from the previous year. Expansion Arts support enabled the Museum to provide special events such as lectures and performances in connection with exhibitions, resulting in greater visibility for the artists involved

2. Services to the Field

Funds in this category are given to organizations of regional or national impact whose primary purpose is to provide the Expansion Arts field with technical assistance. Services provided include bookkeeping, management training, pooled equipment services, informational and administrative assistance and fund raising. This category supplements the limited capacity of small arts organizations with miniscule administrative budgets. In FY 87 we anticipate awarding 19 grants out of 40 applications aggregating $400,000 vs. 20 grants out of 32 applications aggregating $450,000 awarded in FY 86.

Example: In FY 85 a grant of $24,000 was awarded to the Chicano Humanities and Arts Council (CHAC) in Denver, CO, to support the regional dissemination of information and technical assistance to Hispanic arts organizations. CHAC serves approximately 1,500 readers with its monthly newsletter, consistently offering useful and timely information. It also sponsors arts productions and exhibitions regionally and provides intensive technical assistance throughout Colorado as well as in northern New Mexico and Wyoming. In FY 85 approximately 250 artists and 50 organizations were assisted. CHAC's technical assistance workshops have been selected by the Colorado Council on the Arts and Humanities to serve as a model for training programs for individual artists. The Colorado Council and CHAC will jointly conduct sessions, and CHAC's training materials will be used by the Colorado Council staff in future workshops throughout the state.

In addition, Expansion Arts funds assisted in the development of a regional Hispanic artists registry, housed in the CHAC offices and publicized throughout the region. It has been used by directors of art museums, school teachers, gallery owners and other commercial arts organizations.

3. Special Projects

Under the Special Projects category, an initiative has been developed to address the problem of access to private funders by Expansion Arts organizations. The Community Foundation Initiative (CFI) offers funds to community foundations for up to four years and requires a 2-to-1 match in new private money each year. The Expansion Arts money is regranted during the period of the grant, and is restricted to emerging arts organizations, including but not limited to organizations in minority communities. The matching funds are deposited in a permanent restricted endowment. Following the grant period, the income from the endowment will be used to support the same kinds of emerging arts organizations. Each foundation program will continue beyond the period of the Expansion Arts grant. In FY 87 we anticipate awarding 17 grants out of 22 applications aggregating $800,000 vs. 17 grants out of 25 applications aggregating $800,000 awarded in FY 86.

Example: In FY 85 a grant of $40,000 was awarded to the Community Foundation of the Greater Baltimore Area (CFGBA) in Baltimore, MD, to support a subgranting program restricted to the support of small and moderate-sized arts organizations with an emphasis on minority arts groups. The Expansion Arts grant acted as a catalyst to create the first program in a Baltimore

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foundation for support of this kind of arts organization. The CFGBA aggressively solicited four-year pledges from foundations and corporate contributors. The drive has been so successful that in the current (second year) grant period pledge commitments already total 76 percent of the four-year match of $320,000; $100,000 of the match is already in hand, earning interest. The CFGBA awarded the $40,000 to 15 arts organizations, several of which were receiving their first foundation award.

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NATIONAL ENDOWMENT FOR THE ARTS

FOLK ARTS PROGRAM

APPLICATION/GRANT RELATIONSHIP & FUNDING IMPACT: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

	FY 1985			FY 1986			FY 1987		
CATEGORY	APPL	GRANTS	AMOUNT	APPL	GRANTS	AMOUNT	APPL	GRANTS	AMOUNT
APPRENTICESHIPS	44	24	50	35	10	25	...	...	...
FOLK ARTS ORGANIZATIONS	276	150	2,672	275	150	2,500	280	150	2,500
NATIONAL HERITAGE FELLOWSHIPS	107	11	55	123	15	75	130	15	75
STATE APPRENTICESHIP PROGRAM	16	13	351	22	20	500	19	17	425
PROGRAM TOTAL	443	198	3,128	475	195	3,100	429	182	3,000

CATEGORY DISTRIBUTION BY FUND TYPE: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

	FY 1985			FY 1986			FY 1987		
CATEGORY	DEFINITE	INDEF	TOTAL	DEFINITE	INDEF	TOTAL	DEFINITE	INDEF	TOTAL
APPRENTICESHIPS	50	0	50	25	0	25	...	...	...
FOLK ARTS ORGANIZATIONS	2,672	0	2,672	2,500	0	2,500	2,500	0	2,500
NATIONAL HERITAGE FELLOWSHIPS	55	0	55	75	0	75	75	0	75
STATE APPRENTICESHIP PROGRAM	351	0	351	500	0	500	425	0	425
PROGRAM TOTAL	3,128	0	3,128	3,100	0	3,100	3,000	0	3,000

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FOLK ARTS

Purpose

The Folk Arts Program works to preserve and encourage the best among America's rich and varied traditional art forms that have been passed down from generation to generation and to make them more widely available to local and national audiences. The Program 1) assists in the public presentation of folk arts and folk artists in festivals, concerts, exhibits, residencies, and tours; 2) preserves and exposes the traditional art forms through media documentation and through radio/video/film projects; 3) encourages mid-level artists to apprentice themselves to senior traditional master artists and artisans; 4) supports the development of professionally staffed state and community-based folk arts programs as well as independent folk arts institutions; and 5) brings to wide public attention distinguished individual folk artists and artisans who can be acclaimed as masters in their particular fields.

Needs and Opportunities in the Field

There are still too few public and private support institutions in the Folk Arts field. The state folk arts coordinator program has improved this situation considerably, but there are areas of the country still lacking active folk arts support organizations. Local and state public support for these efforts is increasing steadily but is often responsive only to short-term fiscal problems or particular community needs. Private support for the folk arts is still severely limited.

Many state and local-based folk arts professionals are expressing interest in developing festivals, tours, and traveling exhibits of regional scope. Such projects promise to be sophisticated, complex and costly but ultimately cost-effective in that they will reach large audiences. Short radio features presenting local folk arts and broadcast as segments of such popular programs as National Public Radio's Morning Edition are also attracting attention as a way of touching large audiences at low cost, particularly in rural areas. All these ideas depend upon the recognition that folk arts occur in the localities where folk artists live and that such localities may or may not coincide with state or municipal boundaries. Such successful projects as the "Cowboy Poets Gathering" and the "Italian Folk Music Tour" attest to the importance of looking at folk arts from a regional perspective.

The need to improve and increase the transmission of traditional skills, repertoires, and aesthetic principles continues to be a major concern. Apprenticeships initiated by eager learners are traditional in many art forms; but in the folk arts, learners and potential masters are often discouraged by their perception that the traditional arts afford little return to the artist whether in income or status. Such an outlook is reinforced by the general exclusion from school curricula of traditional crafts as well as the more complex forms of folk dance, folk narrative and folk music, both choral and instrumental.

Additional strategies to improve the economic and artistic conditions of traditional crafts workers (who often find their arts placed in competition

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with inauthentic and second-rate mass-produced objects) continue to be a central concern. Traditional artists must be assisted in efforts to win and maintain control over their own artistic production.

Program Response and Category Descriptions

The Program will continue to develop the state-based folk arts programs (State Folk Arts Coordinators). These currently number forty-three and are located in state arts agencies, historical societies and museums; twenty-six are now totally self-sustaining except for individual large-scale program activities. We anticipate that another three states will complete plans for folk arts programs in FY 87, along with another group of perhaps five cities and regional organizations. These figures indicate that the state and local program developmental strategy has been successful. A limited amount of Federal funding will always be necessary in this category, but the gradual takeover of basic program support by state governments will continue, allowing for modest increases in Federal funds available to city and regional programs.

As local and state governments develop additional means of support for their own folk arts groups, the bulk of the Federal Folk Arts Program activity can go to direct support for larger-scaled festivals, major exhibits, media documentation and inter- and intra-state touring. The total number of future applications may decrease slightly, but the amounts requested will continue to increase as projects become more complex and sophisticated.

The Program will continue to assist in the establishment of state-based apprenticeship programs, with Federal funding limited to three or four years. We are now co-funding thirteen such programs and another three are operating without Federal help. The Endowment is considering whether eligibility for these grants should be expanded to include sponsors other than state arts agencies (though only one apprenticeship program would be funded per state). The Individual Apprenticeships category will be discontinued in FY 87 in favor of the State Apprenticeship Program, which has similar purposes.

Conferences on problems particular to folk artists and folk art forms will include a working gathering on effective funding strategies for folk crafts to be held in conjunction with the Smithsonian's 1986 Festival of American Folklife where American crafts will be featured.

1. Apprenticeships

Grants in this category sought the continuance of specific folk arts skills and repertoires by providing apprenticeships at a mid-level career point to study with a master craftsworker or performing artist. Subject to the recommendation of the National Council on the Arts, this category will be eliminated in FY 87 in favor of an increased effort to set up state-based apprenticeship programs, which have similar purposes.

2. Folk Arts Organizations

This category provides support to state and local arts agencies, to folk arts institutions, and to cooperating organizations such as ethnic associations, media centers, museums and presenting organizations to pursue projects of

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significance to the traditional arts. These may include the presentation of folk arts and artists in concerts, exhibits, festivals, residencies, and tours; the documentation of folk arts and artistic activities through the media; convening conferences and conducting surveys on matters of concern to folk artists and artisans; and the provision of salary and administrative support programs. In FY 87 we anticipate awarding 150 grants out of 280 applications aggregating $2,500,000 vs. 150 grants out of 275 applications aggregating $2,500,000 awarded in FY 86.

Example: In FY 83, a grant for $11,000 was awarded the Colorado Council on the Arts and Humanities for the production of thirteen five-minute radio programs celebrating the talents of traditional musicians, singers, and storytellers from throughout the state. To expand the listening audience, five hundred 90-minute tape cassettes containing the entire series were also produced and made available to the public at a modest cost. These sold out within a year and a second run is selling steadily. The radio series, titled "Do Not Pass Me By: A Celebration of Colorado Folklife," was designed for use during Morning Edition segments as broadcast by National Public Radio affiliate stations. To date, 42 radio stations in Wyoming and Colorado have given the entire series airplay, and have repeated the series during FY 85. The success of this project stimulated development of a pilot five-minute video documentary for eventual broadcast over the ABC Arts and Entertainment network as "filler" material between their 60- and 90-minute programs. The pilot features one of the folk artists presented in the radio series. A grant of $17,000, awarded to the Colorado Council on the Arts and Humanities in FY 85, assisted the production of this pilot which will subsequently be used to solicit funding from private foundations and business corporations for an entire 13-week video series.

Example: In FY 84 a grant of $31,400 was awarded the Institute of the American West in Sun Valley, ID for the developmental costs in organizing a two and a half day Cowboy Poetry Gathering in Elko, NV. This was followed in FY 85 by a grant for $14,800 which helped bring more than one hundred ranch poets and cowboy reciters from New Mexico, Arizona, Colorado, Idaho, Montana, Utah, North Dakota, Wyoming, Oregon and Texas to the Gathering. The event was conceived, developed and directed by an ad hoc consortium of folk arts coordinators from those states. Press coverage included lengthy articles in Newsweek, People, Time and the Wall Street Journal. Some of the poets appeared on The Tonight Show and other national television programs, and at least two books have appeared: Cowboy Poetry from Utah -- An Anthology, published by the Utah Folklife Center, and Cowboy Poems, published by Peregrine Smith and advertised widely in the national press. A second Gathering is planned for February 1986, assisted by the Folk Arts Program with a grant of $22,000, less than half of the first Gathering's Federal cost.

3. National Heritage Fellowships

Grants in this category are designed to honor and encourage exemplary master folk artists who often go unrecognized in the eyes of their own communities as well as the general public. Grants are in the amount of $5,000 each. In FY 87 we anticipate awarding 15 grants out of 130 nominations aggregating $75,000 vs. 15 grants out of 123 nominations aggregating $75,000 awarded in

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FY 86. The 1986 nominations included 36 new nominees and 87 holdovers from previous years that the panel felt merited additional consideration.

Example: In FY 83 Miguel (Papa) Manteo, master of the ancient opera dei pupi marionette tradition and fifth generation descendant of a theater family originating in Catania, Sicily, was awarded a $5,000 National Heritage Fellowship. Mr. Manteo's grandfather had brought the family and the theater to New York City in 1919 when they began their year-long series of performances of the 16th-century epic "Orlando Furioso," a medieval saga about Charlemagne and his knights, known in its entirety only to the Manteos. Today Papa Manteo's theater houses the last surviving production of this piece operating the several hundred marionettes through the 394 episodes required to enact the entire story. Italian audiences in Brooklyn have long appreciated his extraordinary artistry; but the Heritage award allowed Papa to take his program to mainstream audiences, via a number of bilingual performances at Symphony Space in New York City and to be seen by large audiences on several television programs. It also inspired the Staten Island Institute of Arts and Sciences to initiate a project to build the Manteo family their own small permanent theater and museum in Staten Island. A number of young people have become interested in the tradition and apprenticed themselves to Papa Manteo, and a Governor's award for this extraordinary artist has just been announced by Mario Cuomo.

4. State Apprenticeship Program

This program is no longer described as a "pilot" effort and is being expanded to include any appropriate nonprofit organization desirous of establishing a statewide, within-state apprenticeship program. In FY 87 we anticipate awarding 17 grants out of 19 applications aggregating $425,000 vs. 20 grants out of 22 applications aggregating $500,000 awarded in FY 86.

Example: In FY 84 the Florida Folklife Program received an award of $25,700 to initiate a state apprenticeship program. In FY 85, a second-year grant was awarded for $25,540. The Florida Department of State has prepared a budget request for an appropriation to fund the apprenticeship program with state revenues; if approved, this will provide continuing state support to folk arts apprenticeships beginning in 1986-87. This successful program has utilized the services of a half-time folklorist-coordinator developing and promoting the project concept, identifying participants, overseeing contracts and awards, monitoring and documenting the artist/apprentice arrangements, and presenting the artists and apprentices in such public forums as the Florida Folklife Festival. Some forty traditional artists, both performing and visual specialists, from a great variety of ethnic groups have participated, including Seminole fabric artists, black palmetto weavers, and Hungarian embroiderers, Greek bagpipers and old-time and bluegrass fiddlers. The apprenticeship program has the flexibility necessary to present the extraordinary ethnic variety that makes up the state of Florida.

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NATIONAL ENDOWMENT FOR THE ARTS

INTER-ARTS PROGRAM

APPLICATION/GRANT RELATIONSHIP & FUNDING IMPACT: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

CATEGORY	FY 1985 APPL.	FY 1985 GRANTS	FY 1985 AMOUNT	FY 1986 APPL.	FY 1986 GRANTS	FY 1986 AMOUNT	FY 1987 APPL.	FY 1987 GRANTS	FY 1987 AMOUNT
ARTISTS' COLONIES	22	15	200	25	14	200	20	13	200
INTERDISCIPLINARY ARTS PROJ.	245	73	1,386	204	80	1,250	250	50	1,000
PRESENTING ORGANIZATIONS a/	270	134	2,391	261	127	2,200	265	120	2,025
SERVICES TO THE ARTS	79	34	351	74	27	450	85	32	375
PROGRAM TOTAL	624	262	4,346	564	248	4,100	620	205	3,600

CATEGORY DISTRIBUTION BY FUND TYPE: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

CATEGORY	FY 1985 DEFINITE	FY 1985 INDEF	FY 1985 TOTAL	FY 1986 DEFINITE	FY 1986 INDEF	FY 1986 TOTAL	FY 1987 DEFINITE	FY 1987 INDEF	FY 1987 TOTAL
ARTISTS' COLONIES	200	0	200	200	0	200	200	0	200
INTERDISCIPLINARY ARTS PROJ.	1,386	0	1,386	1,250	0	1,250	1,000	0	1,000
PRESENTING ORGANIZATIONS a/	2,391	0	2,391	2,200	0	2,200	2,025	0	2,025
SERVICES TO THE ARTS	351	0	351	450	0	450	375	0	375
PROGRAM TOTAL	4,346	0	4,346	4,100	0	4,100	3,600	0	3,600

a/ Includes support for a cooperative effort among Dance, Inter-Arts and State Programs to address presenting/touring needs.

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INTER-ARTS

Purpose

The Inter-Arts Program assists: 1) artists to create and produce significant interdisciplinary work that crosses or transcends traditional arts disciplines, 2) presenting organizations which present art of the highest quality and reach diverse audiences and increase public access to the best of the arts, 3) service organizations which help artists and arts organizations to strengthen their growth and development, and 4) artists' colonies which provide creative work time for professional artists.

Needs and Opportunities in the Field

The creation and production of interdisciplinary work has developed vigorously over the past five years, but touring and public access to interdisciplinary art need to be strengthened. These often inherently complicated productions not only challenge the audience's expectations, but require a skillful and committed presenter. The National Performance Network, which subsidizes the costs of touring for non-mainstream performing arts groups, is addressing this situation through cooperative booking and assistance with audience development.

Presenters would benefit from assistance to provide the public with high quality arts programming in a broad range of disciplines and styles. There is growing interest around the country in large-scale arts festivals of international stature. High levels of earned and contributed income, and improved marketing and communication in the field will help presenters offer more imaginative programming.

Development of new or expanded service programs has been limited because of the difficulty of maintaining funding support for core services. The nation's population of artists is growing and their need for technical assistance persists in areas such as management, law, marketing and fund raising. Artists' colonies are receiving requests for residencies in unprecedented numbers, and continue to face financial constraints as operating and maintenance costs rise. There is a need to increase the visibility of artists' colonies with prospective funding sources.

Program Response and Category Descriptions

The Touring and Commissioning Initiative, designed to assist the touring of interdisciplinary work, has grown from a single five-city tour in FY 83 to a series of projects involving 26 productions touring to 15 states in FY 85, including Ohio, Illinois, Minnesota, Virginia, Pennsylvania, Vermont and Massachusetts. A new initiative for Interdisciplinary Artists, jointly developed with the Rockefeller Foundation, was begun in FY 85 to provide additional funds for individual artists engaged in interdisciplinary projects through a regionally administered subgranting program. Presenting networks are being encouraged through the jointly-sponsored Dance/Inter-Arts/State Programs Presenting/Touring initiative, which has seen a 21 percent increase from 1983/84 in engagements of dance companies by presenters in more than 300 communities nationwide in the 1984/85 season.

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In FY 85 a pilot Arts Management initiative was launched with grants to four arts organizations to further the careers of approximately 25 young professional managers who are committed to working with artists and smaller arts organizations. The Program will continue to assist artists' colonies in maintaining and improving their services for working artists. Arts festivals are being examined for their potential to enhance artistic activity and its public visibility.

1. Artists' Colonies

This category supports artists' colonies which provide facilities where professional artists can develop their work free from distraction. In FY 87 we anticipate awarding 13 grants out of 28 applications aggregating $200,000 vs. 14 grants out of 25 applications aggregating $200,000 awarded in FY 86.

Example: In FY 85, an $8,000 grant to the Ucross Foundation in Clearmont, WY provided 33 artists with working residencies that averaged six weeks each. Music, visual, literary and interdisciplinary artists worked on projects at this new colony, which is located on the historic cattle ranch "Big Red." For example, playwright Toni Press completed the first draft of a new play in residence; ceramicist Tip Toland developed new techniques in relief painting on plaster. All artists were selected for the artistic quality of their work rather than their ability to pay residency fees.

2. Interdisciplinary Arts Projects

This category supports artists whose work, either individually or collaboratively, integrates traditional arts disciplines or explores the creative potential of new technologies. Priority is given to the creation and production of new interdisciplinary work which traditionally has difficulty in attracting private support, and dissemination of that work in performance. In FY 87 we anticipate awarding 50 grants out of 250 applications aggregating $1,000,000 vs. 80 grants out of 204 applications aggregating $1,250,000 awarded in FY 86.

Example: An FY 85 grant of $8,000 to the Sun Valley Center for the Arts & Humanities in Sun Valley, ID, assisted the creation of a special event incorporating the outdoor presentation of "Neon Rainbow," a 500-foot polyurethane environmental sculpture created by artists Otto Piene and Alajandro Sina with a concert of "Earth Mass" by the Paul Winter Consort. This performance culminated a summer-long program at this geographically isolated center for contemporary art based on the theme of "Art and Environment." Despite the remoteness of its location, the Sun Valley Center is successful in presenting high quality contemporary work to welcoming audiences who have limited access to such arts events.

3. Presenting Organizations

This category assists presenting organizations that provide performance opportunities for artists and audiences on a regular, long-term basis and help nurture audience appreciation of a wide variety of art of the highest quality. Such organizations include art centers, colleges and universities,

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contemporary arts centers and festivals. The category also supports state arts agencies, regional arts organizations and presenter membership organizations (including consortia) for projects or services that help presenters improve their professional skills, and that assist presenters in booking professional dance companies. In FY 87 we anticipate awarding 120 grants out of 265 applications aggregating $2,025,000 vs. 127 grants out of 261 applications aggregating $2,200,000 awarded in FY 86.

Example: A $12,000 FY 85 grant supported Purdue University, West Lafayette, IN, to present over 50 professional performing artists to an audience of approximately 70,000 from the surrounding community. A newly hired coordinator for audience development initiated a successful support group called the "Friends of Convocations" which already includes 246 members. More than $20,000 has been raised in new and increased contributions. In addition, three residencies have been arranged for artists during the 1985-86 season -- each of which is featuring the performance of a world-premiere commission made possible by this grant. The performers will also conduct classes and visit local schools near the University.

Example - Dance/Inter-Arts/State Programs Presenting/Touring Initiative: The Pennsylvania Council on the Arts received $60,000 in FY 85 for artists' fee support for Pennsylvania presenters to engage out-of-state dance companies such as the Chicago City Ballet, Washington Ballet and the Dance Theater of Harlem. The grant has resulted in a greater commitment by the state to dance touring as indicated by a more than 130 percent match with state funds. Funds from this grant during the 1985-86 season are supporting presenters engaging 42 dance companies performing in 15 communities ranging from small communities such as Meadville and Clearfield to the cities of Pittsburgh and Philadelphia. The Pennsylvania Council estimates that 7,000,000 people will benefit from this project.

4. Services to the Arts

Under this category, artists and arts organizations are provided access to managerial skills and other resources they need if they are to grow and develop. In order to qualify, these service projects must be aimed at constituents in more than one art discipline. In FY 87 we anticipate awarding 22 grants out of 85 applications aggregating $375,000 vs. 27 grants out of 76 applications aggregating $450,000 awarded in FY 86.

Example: An FY 85 grant of $13,000 to the Sangamon State University in Springfield, IL provided fellowships primarily to assist minority individuals and individuals working for arts organizations serving primarily minority audiences to attend an intensive two-week institute in arts administration. This program addresses managers of smaller arts organizations who do not have ready access to professional development programs, and includes topics such as planning, financial and time management, problem solving and program evaluation. Participants included the managing director of the Rio Grande Valley International Music Festival, McAllen, TX; the museum supervisor for the St. Thomas and St. John Museums, U.S. Virgin Islands; and the theater manager of the Genessee Theater, Waukeegan, IL.

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NATIONAL ENDOWMENT FOR THE ARTS

LITERATURE PROGRAM

APPLICATION/GRANT RELATIONSHIP & FUNDING IMPACT: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

	FY 1985			FY 1986			FY 1987		
CATEGORY	APPL.	GRANTS	AMOUNT	APPL.	GRANTS	AMOUNT	APPL.	GRANTS	AMOUNT
AUDIENCE DEVELOPMENT	140	67	396	135	59	300	140	44	400
FELLOWSHIPS	1,779	111	2,190	1,910	108	2,200	2,000	98	2,100
LITERARY PUBLISHING	202	102	1,453	207	93	1,400	225	86	1,300
PROFESSIONAL DEVELOPMENT	18	15	645	15	10	600	18	10	500
SPECIAL PROJECTS	3	3	240	2	2	200	2	2	300
PROGRAM TOTAL	2,142	298	5,125	2,269	267	4,900	2,585	240	4,600

CATEGORY DISTRIBUTION BY FUND TYPE: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

	FY 1985			FY 1986			FY 1987		
CATEGORY	DEFINITE	INDEF	TOTAL	DEFINITE	INDEF	TOTAL	DEFINITE	INDEF	TOTAL
AUDIENCE DEVELOPMENT	396	0	396	300	0	300	400	0	400
FELLOWSHIPS	2,190	0	2,190	2,200	0	2,200	2,100	0	2,100
LITERARY PUBLISHING	1,453	0	1,453	1,400	0	1,400	1,300	0	1,300
PROFESSIONAL DEVELOPMENT	645	0	645	600	0	600	500	0	500
SPECIAL PROJECTS	240	0	240	200	0	200	300	0	300
PROGRAM TOTAL	5,125	0	5,125	4,900	0	4,900	4,600	0	4,600

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LITERATURE

Purpose

The purpose of the Literature Program is to advance excellence in the creation and publication of literature through 1) direct fellowship assistance to individual writers, 2) support for small presses and literary magazines, and 3) support for organizations that develop wider audiences for contemporary creative writing and that provide services for writers.

Needs and Opportunities in the Field

Literary writers in this country make very little money and virtually all -- both emerging and established -- are forced to subsidize their literary work by teaching, writing journalism, or working in other jobs. Average annual earnings from literary writing even for well established artists are in the $5,000 range, and many well-known authors earn no more than $10,000 to $15,000 a year from their art. Private sector support to writers is limited and state support uneven. The need for individual fellowships is clear.

Centralization in the publishing industry continues, further restricting publication opportunities for serious writers. Even in the literary market this trend is visible. John Irving's recent book, Cider House Rules, sold for $1,200,000 for the hardback rights, and an additional $2,000,000 for paperback rights. Such sums expended for one book means that other literary books will not be published by this commercial press. Independent literary presses are attempting to serve the writer and the literary market; they need relatively small amounts of investment capital ($10,000 to $20,000 per book). Creative writers, young and established alike, need independent publishers.

Readings and residencies develop and reach audiences for serious prose and poetry, and provide income for writers. Literary centers and service organizations provide important support for writers, who often work in isolation, and to literary organizations needing help in their search for private funds.

Program Response and Category Descriptions

Continuation of the increased fellowship amounts of $20,000 offered in all genres will allow writers to devote a full year to their work. Publication and dissemination of literature will remain a high priority, and higher grant amounts will be available to those presses publishing volumes of prose in press runs of over 2,500 copies. The Program will emphasize this direct support, though it will continue to fund residencies and other projects which bring talented writers into contact with audiences. It will also assist organizations which provide technical assistance to the field. The FY 85 initiative, Writer's Choice: The Best of the Small Presses, and support for the Syndicated Fiction Project, will continue. The small press exhibit, cosponsored by the United States Information Agency, at two of the most influential international bookfairs, Liber (Spain) and the Frankfurt International Book Fair (West Germany), that allowed presses the opportunity to market foreign rights, will also continue.

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1. Audience Development

Grants in this category are designed to develop and reach audiences for contemporary creative writing of the highest quality. Three types of grants are awarded: Residencies for Writers, Assistance to Literary Centers, and Audience Development Project grants. In FY 87 we anticipate awarding 44 grants out of 140 applications aggregating $400,000 vs. 54 grants out of 135 applications aggregating $500,000 awarded in FY 86.

Example - Writer Residency: In FY 83 a grant of $5,000 was awarded to Boise State University, Boise, ID, to support a combination of lectures, workshops, and readings in the community. Total attendance at sponsored events was over 2,500, a figure which does not include the audience for a phone-in radio show with one of the writers. Writers involved were novelists James Baldwin, Larry McMurtry, David Nevin, Diane Johnson, Tony Hillerman, and Joan Aiken. The program was carried into junior high and elementary schools and features were broadcast on local radio. It also expanded to the local community through lunchtime readings at the YWCA and bookstore appearances by each author. The attendance for James Baldwin was 973 and for Larry McMurtry 547, figures which would be outstanding even in a much larger city. Community involvement was also evidenced by local corporate donations of $4,000 to the program.

Example - Literary Center: In FY 85 a grant of $21,850 awarded to the Loft in Minneapolis, MN helped to support readings, classes, workshops, and literary prizes. Approximately 4,500 people participated, and of a total budget of $271,788, the Loft paid $110,000 directly to several hundred writers in fees and awards. A central force in the expansion of upper-midwestern literary activity, the Loft is a leader in innovative programming as exemplified by their newest project, a month-long, intensive workshop on the writing of creative nonfiction, a refreshing change from the usual emphasis on poetry and fiction.

Example - Audience Development Project: In FY 83 a grant of $10,000 was awarded to the Santa Fe Public Library for the Writers' Cooperative of Santa Fe, NM. Led by writer Stan Steiner, the group's project was to bring books and writers to small, rural, and mining communities that have no convenient access to them. The writers constructed a book booth at the New Mexico State Fair, where they sold 400 books, accumulated a 12,000-name mailing list, and talked to thousands more interested people who claimed they hadn't read a book since high school. Then, in a van fitted with stocked bookshelves, various writers traveled to preselected small towns to sell books and talk with members of the public, most of whom had never met a writer. Extremely successful on its own, this project also inspired the Writers-in-the Churches program and a small town radio series, Writers Meet Readers, to be broadcast across New Mexico. Stories appeared in both the Denver Post and the New York Times, sparking inquiries to the Literature Program from other organizations wishing to undertake similar projects.

2. Fellowships for Creative Writers and Translators

This category enables exceptionally talented writers of poetry, fiction, and other creative prose to set aside time for writing and research. It also assists published translators of creative literature to set aside time for

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specific translation projects, especially those from languages insufficiently represented in English. In FY 87 we anticipate awarding 98 grants out of 2,000 applications aggregating $2,100,000 vs. 108 grants out of 1,910 applications aggregating $2,200,000 in awarded FY 86.

Example - Poetry: In FY 84 a grant of $12,500 was awarded to Mr. James V. Brummels in Winside, NE. Mr. Brummels was able to complete four major projects during his grant period, two collections of poems, a collection of short stories, and a novella. In 1985 he was nominated for the General Electric Foundation award for younger writers and for a Breadloaf scholarship. Mr. Brummels has had work published in many literary journals and magazines including The Iowa Review, Prairie Schooner, and Hollins Critic.

Example - Prose: In FY 83 a grant of $12,500 was awarded to Ms. Louise K. Erdrich in Cornish, NH. Ms. Erdrich used her fellowship to begin a new manuscript entitled Tracks and to complete a novel, Love Medicine, published by Holt, Rinehart, & Winston. Her novel was chosen by the National Book Critics Circle as the best work of fiction in 1984, and awarded the Sue Kaufman Prize for First Fiction from the American Academy and Institute of Arts and Letters, the Virginia Scully Prize, the Great Lakes Colleges Association Prize for Fiction, the American Book Award from the Americans Before Columbus Foundation, and the Los Angles Times Book Prize for Fiction. In 1985 Ms. Erdrich was awarded a Guggenheim Fellowship.

Example - Translators: In FY 84 Caterina Provost of Pittsburgh, PA, received a Fellowship for Translators of $8,000 to support her translation from Italian of the poetry of Giorgio Chiesura. During her fellowship, Ms. Provost translated one-fourth of the poems in Light Without Motion and selections from La Zona Immobile, a sequence of poems about the poet's two-year imprisonment by the Germans in World War II. This sequence was a finalist for the Premio Strega Award in Italy. The fellowship allowed Ms. Provost to reduce her teaching schedule and devote more time to her translations. As a result of the award, one prominent translation journal solicited and accepted for publication work from Light Without Motion. The American Literary Translators Association invited Ms. Provost to chair a panel discussion on Italian literature at their annual conference. The manuscript of the translations completed during the fellowship is now being considered for publication by W.W. Norton.

3. Literary Publishing

This category assists noncommercial small presses and literary magazines which publish contemporary creative writing of high quality, as well as projects for the distribution of that writing. Small press grants typically support editions of 3,000 to 5,000 copies, press runs of a size commercial publishers are unwilling to undertake, but which represent average sales figures for serious fiction and collections of fine poetry. In FY 87 we anticipate awarding 86 grants out of 225 applications aggregating $1,300,000 vs. 93 grants out of 207 applications aggregating $1,400,000 awarded in FY 86.

Example - Small Press Assistance: In FY 84, Sun & Moon Press of Los Angeles, CA, was awarded $15,000 to support the publication of four titles: Interviews, a book of interviews by Djuna Barnes, City of Glass, the first novel in a

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trilogy by Paul Auster, Solution Passage: Poems 1978-1981, a collection of poems by Clark Coolidge, and Mangled Hands, a first novel by Johnny Stanton, as part of The New American Fiction Series. As part of its commitment to contemporary American fiction, in 1984 Sun & Moon Press began this series of outstanding works representing new directions in fiction. Sun & Moon publications are promoted and distributed nationwide by independent sales representatives, small press book distributors, and bookstore and library agents such as The Baker & Taylor Company. These four books have been reviewed in the national media including The New York Times Book Review and Publishers Weekly. Sales have been brisk. The first editions of Interviews and the first novel are almost sold out, and the publisher expects to reprint both books. Sales of foreign rights for Interviews were made in Germany (and the German edition has already sold out), Italy, France, and Spain. Other financial support for this project came from individual contributions to the press and sales revenues.

Example - Literary Magazine Assistance: In FY 84, Tendril of Green Harbor, MA, was awarded $8,900 to support the publication of three issues of the journal, increases in their payments to contributors and their efforts to attract a broader readership. Founded in 1977, Tendril has published 20 issues to date. The journal seeks to publish an eclectic selection of poetry and fiction by new and established writers. During the grant period, Tendril published two of its largest and most ambitious issues. Issue 18 was a special collection of 19 essays on poetics and the nature of contemporary American poetry. Double issue 19/20 was their seventh anniversary issue containing 11 short stories, new work by more than 90 poets, and a "Featured Poet" section. The print runs for both issues were 2,500. This publication seeks to reach wider audiences by advertising in more than 10 other national literary journals. Tendril participated in the 1985 American Booksellers Association convention.

4. Professional Development

This category assists national organizations which provide professional assistance to creative writers and literary publishers. In FY 87 we anticipate awarding 10 grants out of 18 applications aggregating $500,000 vs. 10 grants out of 15 applications aggregating $600,000 awarded in FY 86.

Example - Academy of American Poets: In FY 84, a grant of $33,000 was awarded to the Academy of American Poets in New York City to support four specific projects of national significance. Endowment funds supported: 1) the publication of 300 copies of the college prize poetry anthology in which 54 student poets from 46 states and 40 college and universites are represented; 2) the Lamont Poetry Prize for a second volume of poetry from a promising poet; 3) the Walt Whitman award given to a poet not yet published in book form (the award involves a cash prize, publication, and purchase of 200 copies of the award book); and 4) the Oral Archive of American Poetry, a project involving the taping of 24 American poets including Robert Pinsky, Mary Oliver, Amy Clampitt, Yehuda Amichai, and Annie Dillard. Finished tapes are housed at the Lamont Library at Harvard University and transcripts are available for general publication.

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5. Special Projects

This category assists unique projects that address needs in the field in an especially innovative manner. We anticipate awarding 2 grants out of 2 applications in FY 87 for $300,000 vs. 2 grants of 2 applications awarded in FY 86 for $200,000.

Example - Syndicated Fiction Project: With an FY 85 grant of $100,000 the Syndicated Fiction Project, managed by P.E.N. American Center in New York City, will enable 15 newspapers nationwide to publish work of 100 creative writers, reaching a combined readership of 10 million. Once a common feature, publication of creative fiction in American newpapers had almost ceased to exist. The Syndicated Fiction Project seeks to renew the interest of newspapers across the country in the idea that there is a wide reading audience for creative writing from writers of many diverse backgrounds. In a January 6, 1985, New York Times article titled "The War Between Writers and Reviewers," Thomas Fleming, author of 14 novels, praised the Syndicated Fiction Project as a highly successful program that should serve as a model to stimulate ways of making creative writing more available to the public.

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NATIONAL ENDOWMENT FOR THE ARTS

MEDIA ARTS PROGRAM

APPLICATION/GRANT RELATIONSHIP & FUNDING IMPACT: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

CATEGORY	FY 1985 APPL.	FY 1985 GRANTS	FY 1985 AMOUNT	FY 1986 APPL.	FY 1986 GRANTS	FY 1986 AMOUNT	FY 1987 APPL.	FY 1987 GRANTS	FY 1987 AMOUNT
AMERICAN FILM INSTITUTE	3	3	2,379	3	3	2,350	3	3	2,150
FILM/VIDEO ART	385	139	3,291	490	141	3,050	700	140	2,900
PROGRAMMING IN THE ARTS	155	97	3,700	60	33	4,913	30	25	4,200
RADIO PROJECTS	148	66	475	150	32	500	133	33	450
SPECIAL PROJECTS a/	4	4	267	3	3	250	4	4	500
PROGRAM TOTAL	840	259	10,112	906	237	13,063	912	225	10,200

CATEGORY DISTRIBUTION BY FUND TYPE: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

CATEGORY	FY 1985 DEFINITE	FY 1985 INDEF	FY 1985 TOTAL	FY 1986 DEFINITE	FY 1986 INDEF	FY 1986 TOTAL	FY 1987 DEFINITE	FY 1987 INDEF	FY 1987 TOTAL
AMERICAN FILM INSTITUTE	2,379	0	2,379	2,350	0	2,350	2,150	0	2,150
FILM/VIDEO ART	3,291	0	3,291	3,050	0	3,050	2,900	0	2,900
PROGRAMMING IN THE ARTS	2,750	950	3,700	4,363	650	4,913	3,250	950	4,200
RADIO PROJECTS	475	0	475	500	0	500	450	0	450
SPECIAL PROJECTS a/	67	200	267	50	200	250	300	200	500
PROGRAM TOTAL	8,962	1,150	10,112	12,213	850	13,063	9,050	1,150	10,200

a/ In FY 85, includes $200 of FY 83/84 Treasury funds carried into FY 85. In FY 86 includes $200 of FY 85/86 Treasury funds; includes $400 of FY 86/87 Treasury funds carried into FY 87. In FY 87, includes $400 of FY 86/87 Treasury funds.

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MEDIA ARTS: FILM/RADIO/TELEVISION

Purpose

The Media Arts Program's intent is 1) to encourage the creation of work of the highest artistic quality and of national and regional significance, 2) to raise public consciousness of the best media art through broadcast and exhibition, 3) to convey the best of the other arts to large audiences through the art of media, and 4) to interpret and preserve the best work of past and present.

Needs and Opportunities in the Field

The cassette revolution in distribution continues. All kinds of material (feature films, documentaries, music videos) are now being consumed in the home. As video cassette recorders become more widely used in homes, schools, and libraries, there is a major opportunity to distribute already-existing arts programming and independent media art for non-broadcast viewing. While some commercial cable arts ventures have failed, the potential of nonprofit cable arts programming remains largely unexplored.

Consistent ongoing funding, meticulous quality control, and more private sector partners would assist in bringing the arts to television audiences. Risk-taking experimental series and excellent children's programming should be encouraged.

Although series such as Great Performances, Live from the Met, and American Playhouse bring the arts to millions, a cost-effective opportunity to bring more of the arts to the public lies in the development of a series in a magazine format covering all the arts for television.

The creation of media art is expensive and its distribution difficult. Independent media artists, particularly those who are moving from documentary to narrative feature-length film production, require diverse and specialized funding sources, more sophisticated support systems and distribution assistance. Media arts centers, which assist film and video artists in creating and exhibiting their work, would benefit from cash reserves to both upgrade and replace equipment and attract and retain professional management.

Drama on public radio could receive a major impetus through the establishment of a national radio drama center where radio producers, writers, and actors could collaborate to create new works for radio audiences.

Program Response and Category Descriptions

Video cassette recycling of previously-funded television arts programs for educational purposes is under study. A pioneering cable television series on The Learning Channel showing high quality films and videotapes by independent media artists is in its second year. The Getty Trust and the Media Arts Program have funded two pilots for a major television arts series for children. Planning continues for development of an arts magazine for television.

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The Program encourages independent feature filmmaking through production grants, and through support of organizations that assist independent media artists. Video artists have access to state-of-the-art equipment at reduced rates through a new cooperative venture between Endowment-supported media arts centers and commercial production facilities in New York, Chicago, and Los Angeles. A few media arts centers and service organizations have had initial success in distributing work of independent media artists through cassette sales and rentals.

Following the Advancement Program's success with media centers, a pilot project of managment assistance grants to media arts centers is being tested. This will help media centers to develop new and increased sources of contributed support and earned income which will allow them to upgrade their facilities and expand their hours of operation.

Discussions continue among radio professionals, major stations, National Public Radio and the Media Arts Program about the possibility of establishing a radio drama center at a major audio facility. Such a facility would provide state-of-the-art facilities for major producers of radio drama, and would serve as both an executive producing organization and a marketer/distributor of quality radio drama to the public radio field.

1. The American Film Institute

Funds in this category support a) a variety of projects initiated by the American Film Institute (AFI) including exhibition, television and video services, training of advanced students at the Center for Advanced Film Studies, and scholarly and library services; and b) the National Center for Film and Video Preservation, which houses the AFI/Arts Endowment Film Preservation Program of grants to archives, the AFI Catalog of Feature Films, and a national data base system of information on archival film holdings. It also works to increase public awareness of the importance of film preservation.

Endowment support currently provides approximately 23 percent of the Institute's annual budget, with additional support provided by private contributions and membership fees. In FY 87 we anticipate awarding $2,150,000 vs. $2,350,000 awarded in FY 86.

Example - AFI Exhibition Program: In FY 85 the AFI received a grant of $1,600,000 to support several ongoing activities. Among them is its Exhibition Program which showcases important thematic film and video series at the AFI Theater in Washington, DC. This program also organizes major exhibitions for touring to media centers, universities, museums and other sites throughout the country. In April 1985, the AFI Theater presented "China Film Week II," a program of Chinese feature films curated jointly with the Film Department of the Museum of Modern Art, in New York City, and with major assistance from the United States Information Agency. The initial exhibition, which was accompanied by a Chinese delegation (a film actress, representatives from the Shanghai film studios, the Beijing Film College and the Chinese Ministry of Culture) traveled to New York City, Los Angeles, CA, San Francisco, CA, Minneapolis, MN, Austin, TX, and Athens, OH. An extended national tour of "China Film Week II" is currently under way. The exhibition will have visited

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more than 15 additional sites by the end of 1986, providing thousands of Americans with access to some of China's most important feature films which otherwise would not be available to Western audiences. The program is part of a cultural exchange between the United States and the People's Republic of China, originating under the terms of a recent cultural accord between the two countries. The AFI also organized a USIA-sponsored delegation which took five American feature films to the People's Republic of China as part of this exchange.

Example - Preservation: In FY 83, the National Center for Jewish Film in Waltham, MA received a grant of $15,000 through the AFI/Arts Endowment Film Preservation Program to complete the conservation of The Light Ahead, one of many important films held in the Center's unique collection of classic Yiddish feature films. These films are a direct offshoot of the Yiddish theater tradition and contain footage of some of the most famous plays and celebrated performers of both Eastern Europe and the United States in the 1920's, 30's and 40's. The Center also undertook preservation work on rare documentary footage of the Lower East Side, European Jewry, and some early American silent short features with this grant. A completely restored print of The Light Ahead premiered at the New York Film Festival and the Berlin Film Festival where it was warmly received by critics and audiences, providing the National Center for Jewish Film with significant media attention. Subsequently, the Center received not only increased contributions from foundations and individuals, but donations of important new acquisitions from independent filmmakers, national Jewish organizations and private collectors. The increased visibility also resulted in more requests for use of materials in the Center's collection (i.e., researchers for the television series Heritage: Civilization and the Jews, and Herman Wouk's War and Remembrance; art museums in Dallas, TX, Milwaukee, WI, Detroit, MI, Chicago, IL; and scores of universities, geriatric centers and community centers).

2. Film/Video Art

Grants are awarded in five subcategories:

a) Film/Video Production supports individual artists working in film and video, and nonprofit organizations that help them carry out their projects. Regional Fellowships are administered by seven media arts centers, and are jointly supported by the Endowment, the American Film Institute, state arts agencies, and private foundations.

b) Media Arts Centers supports nonprofit organizations which exhibit film/video art, provide artists with access to facilities, and conduct workshops and seminars.

c) The Short Film Showcase brings short films made by independent filmmakers to commercial movie theaters throughout the country.

d) National Services assists organizations that contribute to a national system of support for media arts centers and artists.

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e) The AFI Independent Filmmaker Program is a grant-giving program administered by AFI for the Endowment. It supports media artists working in animated, documentary, experimental, and narrative film and video.

In FY 87 we anticipate awarding 140 grants out of 700 applications aggregating $2,900,000 vs. 141 grants out of 690 applications aggregating $3,050,000 awarded in FY 86.

Example - Film/Video Production: In FY 84 filmmaker Jane Aaron of New York City received $20,000 for Traveling Light, an animated film exploring visual drama of light and shadow. Ms. Aaron is considered one of the finest independent animators in the country, and her film has been widely acclaimed and exhibited at, among other places, the International Animation Festival in France, the Oberhausen Film Festival in Germany, the Sydney (Australia) Film Festival, the Whitney Museum of American Art Biennial, and the Hirshhorn Museum. Previous animated films by Ms. Aaron have been exhibited at the Museum of Modern Art, the Edinburgh (Scotland) Film Festival, the Telluride (Colorado) Film Festival, the New York Film Festival and the Los Angeles Film Exposition (Filmex).

Example - Media Arts Centers: In FY 85, a grant of $10,600 was awarded to the City Movie-Center, in Kansas City, MO, for exhibition of independent, classic, international, and experimental film and video, along with presentations and lectures by visiting film and video makers, scholars, and critics. This year-round program is Kansas City's only major outlet for independent media work; its programs have now expanded to include provision of access to a media library, workshops, and open screenings of works-in-progress. The 4-year-old Center is one of several vigorous media centers which have emerged in recent years to bring otherwise unavailable media art to audiences in the central region of the United States.

Example - Short Film Showcase: In FY 85, $100,000 was awarded to the Foundation for Independent Video and Film in New York City to continue the distribution of films by independent filmmakers to commercial theaters. Through this program 16mm films that would otherwise not be seen by general audiences are enlarged to 35mm and offered free to exhibitors who program them along with feature films. A new short film, American Picture Palaces, entered distribution after premiering at the National Association of Theater Owners convention in November 1985. Other titles currently in the Showcase include Interior Designs by the noted animator Jane Aaron and Garden of Earthly Delights by the master experimentalist Stan Brakhage.

The Short Film Showcase brings the best of short films to the commercial movie audience. Since 1977, this program has funded the presentation of 29 films to millions of moviegoers in over 5,000 commercial theaters.

Example - National Services: In FY 85, an $11,000 grant was awarded to the Sinking Creek Film Celebration in Greeneville, TN, to support the Sinking Creek Film Festival. The annual Festival, including workshops, symposia and lectures as well as film screenings, is considered one of the finest small

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film festivals in the country. It has earned this reputation because of the artistic excellence of its programming, its commitment to the work of independent media artists, its vitality as a center for media art in a region with few resources of this sort, and the first-rate treatment which artists receive at the Festival. The Festival attracts a wide variety of artists, scholars and critics from all over the country, and has maintained its reputation for excellence since its founding 16 years ago. It provides a rare opportunity for audiences in the Southeast to be exposed to nationally-recognized independent media artists and their work. In addition to the festival, Sinking Creek Film Celebration regularly sponsors screenings, lectures, and workshops devoted to independent cinema all over the country.

Example - Independent Filmmaker Program: In FY 82 a grant of $20,000 was awarded to Renee Cho of Santa Monica, CA, to produce Jazz is My Native Language, a one-hour documentary film on the musical and personal life of composer/pianist/bandleader Toshiko Akiyoshi, a classical musician from post-war Japan who was discovered by Oscar Peterson in Tokyo, and came to the United States in the mid-fifties to become the first Asian to make a name as a jazz artist in this country. The film, completed in 1983, has been highly praised by both jazz and film professionals. It has been exhibited widely throughout the United States, as well as at major national and international film festivals such as the Los Angeles Film Exposition (Filmex), the Munich Film Festival, the Edinburgh (Scotland) Film Festival and the London Film Festival. Another film by Ms. Cho, The New Wife, completed when she was a fellow at AFI's Center for Advanced Film Studies, appeared in the 1984-85 PBS series, "From the American Film Institute."

3. Programming in the Arts

The twelve-year-old Programming in the Arts venture fulfills the Endowment's charge to bring the best of the arts to the widest possible public by supporting major broadcast series on the arts. In FY 87 we anticipate awarding 25 grants out of 50 applications aggregating $4,200,000 vs. 35 grants out of 60 applications aggregating $6,915,000 awarded in FY 86.

Example: In FY 83 a grant of $250,000 was awarded to Metropolitan Pittsburgh Public Broadcasting in Pittsburgh, PA for WonderWorks, a drama series on public television for general audiences. The 26-part series premiered in the PBS core schedule in October 1984 at 8:00 p.m. on Mondays, and has established a regular presence on public television for original dramatic programs and adaptations of classics from children's literature. It has received high marks from critics and educators alike, and has amassed some of the most impressive audience viewing statistics of any series in the PBS schedule. For example, in November 1984 over 12.8 million viewers tuned into WonderWorks. The series has presented original works such as Booker, the story of the the young Booker T. Washington's dream of learning to read, and How To Be A Perfect Person In Just Three Days (directed by Joan Micklin Silver); and such adaptations as W.O. Mitchell's Who Has Seen The Wind?, Katherine Paterson's Bridge To Terabithia, and John Masefield's Box of Delights.

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Example: In FY 83 a grant of $250,000 was awarded to Twin Cities Public Television in St. Paul, MN, for Alive From Off Center. The eight-part anthology series premiered on public television in July 1985 to wide critical acclaim and audience popularity. It has featured collaborations by such artists as Sam Shepard, Joseph Chaikin and Shirley Clarke; Spaulding Gray and Skip Blumberg; John Sanborn and Kit Fitzgerald; and works by William Wegman, Laurie Anderson and Nam June Paik. The second season, scheduled for summer 1986, will include a special five-part "sub-series" on contemporary dance, with collaborations by Trisha Brown, Charles Moulton and Skip Blumberg, Charles Atlas and Karole Armitage. Alive From Off Center has made possible television presentation of the work of innovative and adventurous American contemporary artists who otherwise would not be able to reach the wide audiences possible through the broadcast media.

4. Radio Projects

Grants in this category support outstanding single productions and series, radio workshops and residencies, provision of facilities to independent radio producers, conferences, and other services which foster the creative use of the medium. In FY 87 we anticipate awarding 53 grants out of 155 applications aggregating $450,000 vs. 55 grants out of 150 applications aggregating $500,000 awarded in FY 86.

Example: In FY 85, a grant of $12,800 was awarded to the American Audio Prose Library (AAPL) in Columbia, MO, for the production of the American Prose Series, a project featuring leading American writers reading from and discussing their work. Since 1980, the AAPL has taped and archived 72 1-to-4-hour interviews; collected an additional 180 recordings of prose readings; produced nearly 30 one-hour programs for broadcast; and established itself as the country's most comprehensive collection of prose on tape available to students, teachers, scholars, critics, libraries, and other serious students of American literature. The list of writers in AAPL's catalogue runs from May Sarton, Alice Walker, Toni Morrison, and Toni Cade Bambara, to Norman Mailer, William Kennedy, Andre Dubus, John Edgar Wideman, and Richard Price. The series has been honored by the American Library Association and the National Federation of Community Broadcasters; in 1985, it received an Ohio State Award, the oldest award for excellence in broadcasting. The series is now carried on more than 100 public radio stations nationwide, and generates more than $5,000 per month in revenues from tape sales to listeners, schools, and libraries.

5. Special Projects

In order to meet the special needs of the rapidly developing media art forms and their markets, special projects are occasionally initiated by the Media Arts Program. These projects are used to lever special funding, encourage participation in previously unexplored areas of media art, or to assist in its distribution or preservation. In FY 87 we anticipate awarding 4 grants out of 4 applications aggregating $500,000 vs. 3 grants out of 3 applications aggregating $250,000 awarded in FY 86.

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Example: In FY 85 a grant of $50,000 was awarded to the Museum of Modern Art in New York City to host the 41st annual Congress of the International Federation of Film Archives (FIAF) in April 1985. FIAF meets in a different country each year in pursuit of its goal to preserve, document and catalogue the cinematic heritage of every film-producing nation. Each year, the Congress focuses on the development of cinema relating to its host country. Since the Museum of Modern Art was the first museum to recognize film as a major art form and was celebrating the 50th anniversary of the founding of its Film Department, it was most appropriate for MoMA to host the first Congress to be held in the United States in 15 years. It was a key opportunity to promote the preservation efforts of all American archives. At the 1985 Congress over 150 professional film archivists from Eastern and Western Europe, the Soviet Union, Asia and Latin America, as well as the United States and Canada met to concentrate on those areas in which MoMA's archive shows particular strength: the American silent film, technicolor preservation and computer cataloguing. The proceedings of the conference will be published and made available to the general public.

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NATIONAL ENDOWMENT FOR THE ARTS

MUSEUM PROGRAM

APPLICATION/GRANT RELATIONSHIP & FUNDING IMPACT: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

CATEGORY	FY 1985			FY 1986			FY 1987		
	APPL.	GRANTS	AMOUNT	APPL.	GRANTS	AMOUNT	APPL.	GRANTS	AMOUNT
CARE OF COLLECTIONS a/	203	124	2,610	229	129	2,700	225	96	2,100
PROFESSIONAL DEVELOPMENT	153	75	639	59	17	150	100	55	600
SPECIAL EXHIBITIONS b/	784	319	5,801	654	300	6,850	525	220	4,500
SPECIAL PROJECTS	3	3	37	5	2	100	8	3	100
UTILIZATION OF MUSEUM RESOURCES a/	236	122	2,798	214	103	2,400	311	133	3,000
PROGRAM TOTAL	1,339	643	11,885	1,161	551	12,200	1,169	507	10,300

CATEGORY DISTRIBUTION BY FUND TYPE: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

CATEGORY	FY 1985			FY 1986			FY 1987		
	DEFINITE	INDEF	TOTAL	DEFINITE	INDEF	TOTAL	DEFINITE	INDEF	TOTAL
CARE OF COLLECTIONS a/	2,303	307	2,610	2,200	500	2,700	1,500	600	2,100
PROFESSIONAL DEVELOPMENT	639	0	639	150	0	150	600	0	600
SPECIAL EXHIBITIONS b/	5,408	393	5,801	6,450	400	6,850	3,900	600	4,500
SPECIAL PROJECTS	37	0	37	100	0	100	100	0	100
UTILIZATION OF MUSEUM RESOURCES a/	2,798	0	2,798	2,400	0	2,400	3,000	0	3,000
PROGRAM TOTAL	11,185	700	11,885	11,300	900	12,200	9,100	1,200	10,300

a/ In prior submissions, included as part of Museum Collections and Resources.
b/ In FY 85 includes 249 applications and 119 grants forward funded from FY 84. In FY 85 excludes $2 of no-year Program (Definite) funds. In FY 86 excludes 249 applications and 119 grants forward funded in FY 85; includes $100 of FY 86/87 Treasury funds carried into FY 87. FY 86 includes two rounds of Special Exhibitions grants. In FY 87 excludes $100 of FY 86/87 Treasury funds.

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MUSEUMS

Purpose

The Museum Program assists museum projects of the highest artistic quality of national or regional significance that 1) present works of art to the public, 2) preserve works of art, 3) encourage study and documentation, and the development of educational programs that make materials accessible to the public, and 4) strengthen the skills of professionals serving the field. General operating support is not provided.

Needs and Opportunities in the Field

Discussions with the field at the Endowment's seminar on museums in Dallas, TX in February 1985 helped identify needs and opportunities for constructive support of the museum field.

Special exhibitions continue to be seen as the most effective way to present art to the public and can also be used to highlight an institution's permanent collections. There is need for greater emphasis on moderately priced catalogues and publications and for educational programs that contribute to the public's understanding of art. More regular exhibitions of contemporary art, as well as programming that involves collaboration with other art forms would help to attract a more diverse public. Also, adventurous use of the media can help educate audiences, encouraging them to visit exhibitions and participate in other programs.

Collection sharing allows institutions with limited resources to expand their programming. Interpretive presentations of permanent collections supplemented by tours, lectures, catalogues and special outreach programs help museums bring visual arts to a wider audience. Documentation of collections and the making of this information accessible to scholars and the public is a priority. Educational programming needs strong leadership, and is best developed through close collaboration with curatorial staff.

Museums can become cultural resources within their communities by providing carefully coordinated long-term series of exhibitions and programs that reflect the artistic missions of the institutions.

The care of works of art continues to be a prime concern. More conservation specialists and master-apprenticeships in conservation are needed, as are graduate programs to train conservators to preserve ethnographic and archaeological works of art. Funds are needed to conserve works of art or stabilize them until more advanced treatment can be provided, particularly for smaller museums without access to conservation facilities. Many institutions need to improve the physical environment in which objects are stored or exhibited by installing appropriate climate control and security systems.

Training of museum professionals is crucial to the health of the field. More internships are needed at the postgraduate level in curatorial, education, and conservation departments.

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Program Response and Category Descriptions

Special exhibitions supporting significant presentations of art from all historical periods, especially those of living American artists, will continue to be a Program priority. Funding will be provided for publications and educational programs related to special exhibitions. Exhibitions that are scheduled to tour beyond the organizing institution will continue to be encouraged; in FY 84, 35 percent of funded exhibitions toured to other states or regions.

The Program will continue to address the need for museums to research, interpret and present their permanent collections, and to create interpretive programs relating their collections to special exhibitions. It will also continue to support collection sharing and long-term loans of objects and/or collections to other institutions as a means of making art more readily available to communities lacking major collections of art. The Program funds museum educational and outreach programs and encourages the development of educational projects that serve as models for the field.

Through a new Special Artistic Initiative the Program will assist museums to clarify or redefine their mission and artistic direction by supporting coordinated long-term series of artistic programs.

The Program continues to provide funds for the conservation of works of art of the highest quality and for the improvement of storage, security and climate control facilities. It supports art conservation training centers and master-apprenticeships in conservation. Support will also be offered for new training programs for the conservation of ethnographic and archaeological works of art.

Professional development will be assisted through museum internships and fellowships for museum professionals, enabling them to upgrade their skills and keep current with trends in the field.

Two other Federal agencies make grants to Museums: The National Endowment for the Humanities (NEH) and the Institute of Museum Services (IMS). The Program regularly consults with staff at NEH and IMS to avoid overlaps of funding. Occasionally NEA and NEH Museum Programs support different components of a single project. IMS gives operating support to all kinds of museums, including historical and science museums which normally lie beyond the scope of the Arts Endowment. IMS now provides conservation grants as well to all kinds of museums; 25 percent of the grants and funds awarded in FY 85 supported projects involving works of art. The Arts Endowment also helps the USIA by identifying museum professionals to serve on USIA panels for international exhibitions.

1. Care of Collections

This category supports the permanent art collections of museums through a) conservation (e.g., surveys of collection needs, actual conservation, purchase of conservation equipment, internships, master-apprenticeships, workshops, and support for major conservation training centers); and b) collection maintenance (e.g., updating or installation of climate control equipment, security systems, and storage facilities).

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Formerly, support for these kinds of museum activities was available through the Museum Collections and Resources category. For purposes of clarification to the field, that category has been split into two separate categories, Care of Collections and Utilization of Museum Resources. The kinds of projects funded will remain the same; only the category structure has changed.

In FY 87 we anticipate awarding 96 grants out of 225 applications aggregating $2,100,000 vs. 129 grants out of 229 applications aggregating $2,700,000 awarded in FY 86.

Example - Conservation: In FY 83 Indiana University, Bloomington, IN, was awarded $20,000 to conserve two important murals by Thomas Hart Benton, known for his paintings of rural America, located in the University's Woodburn Hall. Painted in 1932 for the Century of Progress Exposition in 1933-34 in Chicago, the murals were given to the University in 1940. The murals had deteriorated dramatically owing to the inherent fragility of Benton's technique and the poor environment of Woodburn Hall. The grant was the critical catalyst for securing the funds needed to preserve and safeguard these works. The conservation staff of the Indianapolis Museum of Art and the Indiana University Art Museum were jointly responsible for the project and, with the installation of climate control in the area where the murals are exhibited, they should now be safe for many generations.

Example - Collection Maintenance: In FY 84 a grant of $100,000 was awarded to the Wadsworth Atheneum, Hartford, CT, to support the installation of new climate control equipment. Its installation in the Samuel P. Avery Memorial Building, which was not air conditioned, was part of a master plan to upgrade the facilities of the Museum and bring them up to current standards for storage, climate control, and security. The Wadsworth Atheneum, one of the oldest public museums in America, possesses an outstanding collection of paintings and decorative arts. The implementation of this grant allowed the Museum to reinstall its extensive American collection in the Avery Building and focus the public's attention on its important holdings.

2. Professional Development

The Program assists Professional Development through a) Fellowships for Museum Professionals, and b) Museum Training (formal training, internships and apprenticeships). In FY 87 we anticipate awarding 55 grants out of 100 applications aggregating $600,000 vs. 17 grants out of 59 applications aggregating $150,000 awarded in FY 86. The requested allocation for FY 87 represents a return to the historical level for this category. Owing to a change in deadlines in FY 86, fewer applications were received, therefore a lower allocation was needed.

Example - Museum Training: In FY 84 a grant of $13,740 was awarded to the Joslyn Art Museum, Omaha, NE, to support two full-time postgraduate internships in the curatorial departments of the Museum. The interns, selected from Newark, DE, and Cincinnati, OH, worked under the supervision of the curators of European and American Art. The intent of the program was to involve the interns directly in a broad range of curatorial duties including exhibitions, educational programs, collection research and publications

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in order to prepare them for future curatorial positions. The interns were also able to travel to the Nelson-Atkins Museum of Art in Kansas City and to the Des Moines Art Center to view collections. The internships provided valuable on-the-job training and contributed significantly to their professionalism as they entered the field.

Example - Fellowships for Museum Professionals: In FY 85, Barbara A. Hall, Associate Director/Curator of the Haffenreffer Museum, Bristol, RI, was awarded a Museum Professional Fellowship grant of $3,590 to research traditional native North American arts of the western subarctic. Her research involved a study of quill, bead and silk thread embroidery, basketry and stone carvings in museum collections in Manitoba, Alberta and the Northwest Territories. She also sought to compare the materials, designs and function of objects produced by craftsmen today to those made 100 years ago. Her investigations provided a complex and revealing picture of the present day production and marketing of native ethnographic works of art in Canada. She intends to publish the results of her research, which will contribute significantly to our knowledge of traditional North American arts.

3. Special Exhibitions

This category assists museums and other organizations to develop, tour or participate in exhibitions of borrowed works. In order to effect a timely review of Special Exhibition grant applications in advance of project start dates, the reviews of the Special Exhibitions and Professional Development categories were switched in FY 86. As a result Special Exhibition applications were received and reviewed twice within the fiscal year after an interval of nine months, hence the larger allocation for this category in FY 86. In FY 87 we anticipate awarding 220 grants out of 525 applications aggregrating $4,500,000 vs. 300 grants out of 654 applications aggregating $6,850,000 awarded in FY 86.

Example: In FY 84 a grant of $75,000 was awarded to the Cleveland Museum of Art, Cleveland, OH, for an exhibition of the work of the Neapolitan Baroque painter Bernardo Cavallino (1616-56). The exhibition, the first devoted solely to Cavallino, was co-organized with the Kimbell Art Museum, Fort Worth, TX, and the Museo e Gallerie Nazionali di Capodimonte, Naples, Italy, and offered valuable new insights into the artistic and cultural history of the Neopolitan Baroque. It was well received and was featured in several substantive articles in national publications. The showings in Cleveland and at the Kimbell were enriched by educational programs, including a two-day scholarly symposium, lecture series and gallery talks, baroque concerts and children's programs.

Example: In FY 84 the Walker Art Center in Minneapolis, MN, was awarded a grant of $20,000 for the first major museum exhibition of the work of the contemporary American artist, Jennifer Bartlett. The exhibition chronicled her development from abstraction to a unique style of realism and was accompanied by a fully illustrated scholarly catalogue. The exhibition toured to the Nelson-Atkins Museum of Art, Kansas City, MO; the Brooklyn Museum, Brooklyn, NY; La Jolla Museum of Contemporary Art, La Jolla, CA; and the Carnegie Institute, Pittsburgh, PA. The exhibition and tour received broad corporate support.

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4. Special Projects

This category is for innovative projects of national or regional significance not eligible under other funding categories. In FY 87 we anticipate awarding 3 grants out of 8 applications aggregating $100,000 vs. 2 grants out of 5 applications aggregating $100,000 awarded in FY 86.

Example: In FY 85, The Gallery Association of New York State, Hamilton, NY, was awarded a grant of $9,000 for the publication of "Crating for Museums," an introductory guide to the principles, techniques and materials used in preparing works of art for travel. The book, written primarily for the staffs of small museums, provides basic, current information and step-by-step instructions for wrapping, packing and crating. It is being made available at a low cost to museums and exhibiting institutions; it should be a valuable resource for many artists and organizations, helping to ensure the safe handling of works of art.

5. Utilization of Museum Resources

This category supports the permanent art collections of museums through grants to assist a) Presentation and Education (e.g., reinstallations, temporary exhibitions, collection sharing and educational projects); b) Catalogue (e.g., documentation, research, and publication of museums' art collections); c) Visiting Specialists to provide temporary consultation on specific projects; and d) a Special Artistic Initiative, new for FY 87 (e.g., long-term coordinated services of exhibitions and programs primarily concerned with the use and interpretation of permanent collections).

Formerly, support for these kinds of museum activities was available through the Museum Collections and Resources category. For purposes of clarification to the field, that category has been split into two separate categories, Care of Collections and Utilization of Museum Resources. The kinds of projects funded will remain the same; only the category structure has changed.

In FY 87 we anticipate awarding 133 grants out of 311 applications aggregating $3,000,000 vs. 103 grants out of 214 applications aggregating $2,400,000 awarded in FY 86. Visiting Specialists, formerly under the Professional Development category, is now included under Utilization of Museum Resources, and this, along with the Special Artistic Initiative, accounts for the increase in the number of applications and grants anticipated for FY 87.

Example - Utilization of Museum Resources: In FY 84, the Minneapolis Institute of Arts in Minneapolis, MN, was awarded a grant of $25,000 to support an exhibition of the old master and 19th-century European paintings in the Tweed Museum of Art in Duluth, MN. The exhibition, curated by the Minneapolis Institute, provided the opportunity for the collection of the Tweed Museum to receive the scholarly attention it deserved and to benefit from urgently needed conservation care. This sharing of museum resources resulted in the organization of an extensive tour. The exhibition will open at the Minneapolis Institute of Arts and travel to the Flint Institute of Arts, Flint, MI; Columbus Museum of Art, Columbus, OH; Robert Hull Fleming

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Museum, Burlington, VT; Arkansas Art Center, Little Rock, AR; Mary and Leigh Block Gallery, Northwestern University, Evanston, IL; Cedar Rapids Museum of Art, Cedar Rapids, IA and Tweed Museum of Art, Duluth, MN.

Example - Catalogue: In FY 84 the Sheldon Memorial Art Gallery/University of Nebraska, Lincoln, NE, was awarded a grant of $25,000 to research and prepare for publication a two-volume catalogue of the Gallery's collection of 20th-century American paintings. The collection is widely recognized as an important resource with substantive holdings by such artists as Ralph Blakelock, Robert Henri, Marsden Hartley and Alfred Maurer. The catalogue preparation entails preparing documentation and interpretive entries on approximately 100 key works for Volume I and compiling documentation and photographs for an illustrated index of the entire collection which will comprise Volume II.

Example - Visiting Specialists: In FY 84, the Art Museum Association of America in San Francisco, CA, was awarded a grant of $4,500 to support its Visiting Specialist Program which gives museums nationwide access to professional advice beyond the expertise of their staffs. The seven museums which benefited from visiting specialist consultations represented the diverse spectrum of the museum field. The services provided included consultations on arts education, gallery renovation, membership development, long-range planning and collection development. The museums selected were the University Art Museum, Norman, OK; Huntsville Museum of Art, Huntsville, AL; Paris Gibson Square Center for Contemporary Art, Great Falls, MT; De Saisset Museum of Art, Santa Clara, CA; Honolulu Academy of Arts, Honolulu, HI; The Toledo Museum of Art, Toledo, OH; and University Art Museum, Long Beach, CA.

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NATIONAL ENDOWMENT FOR THE ARTS

MUSIC PROGRAM

APPLICATION/GRANT RELATIONSHIP & FUNDING IMPACT: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

CATEGORY	FY 1985 APPL.	FY 1985 GRANTS	FY 1985 AMOUNT	FY 1986 APPL.	FY 1986 GRANTS	FY 1986 AMOUNT	FY 1987 APPL.	FY 1987 GRANTS	FY 1987 AMOUNT
ENSEMBLES a/	336	344	10,575	363	336	10,650	333	333	9,950
FELLOWSHIPS	996	91	766	1,184	112	950	1,225	115	900
PRESENTERS/FESTIVALS	342	285	2,348	365	279	2,400	385	255	2,000
TRAINING/RECORDING/CENTERS	191	119	1,682	220	183	1,300	235	104	1,350
PROGRAM TOTAL	2,065	859	15,311	2,272	850	15,300	2,380	807	13,100

CATEGORY DISTRIBUTION BY FUND TYPE: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

CATEGORY	FY 1985 DEFINITE	FY 1985 INDEF	FY 1985 TOTAL	FY 1986 DEFINITE	FY 1986 INDEF	FY 1986 TOTAL	FY 1987 DEFINITE	FY 1987 INDEF	FY 1987 TOTAL
ENSEMBLES a/	7,735	2,840	10,575	7,650	3,000	10,650	5,700	3,250	8,950
FELLOWSHIPS	766	0	766	950	0	950	900	0	900
PRESENTERS/FESTIVALS	2,200	160	2,360	2,360	100	2,400	1,850	150	2,000
TRAINING/RECORDING/CENTERS	1,487	115	1,602	1,300	0	1,300	1,250	100	1,350
PROGRAM TOTAL	12,196	3,115	15,311	12,200	3,100	15,300	9,600	3,500	13,100

a/ In prior submissions, Ensembles/Orchestras. In FY 85 excludes $1 of gift funds. In FY 86 includes $100 of FY 86/87 Treasury funds carried into FY 87. In FY 87, excludes $100 of FY 86/87 Treasury funds.

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MUSIC

Purpose

The Music Program fosters artistic excellence (including diversity of excellent art), and access by audiences to that excellence, by assisting organizations of national and regional significance which perform and present music of the highest quality as well as creative and performing musicians of exceptional talent. It especially encourages the performance of American music and the development of individual talent. The Program is divided into four major areas: Ensembles; Fellowships; Presenters/Festivals; and Training/Recording/Centers/Special Projects.

Needs and Opportunities in the Field

Needs and opportunities for constructive support of the music field are described for specific areas as follows:

Individuals: American composers need more commissions, as well as more performances of their works after premieres. Additional opportunities for established ensembles (vocal and instrumental) to become familiar with American composers and their music would benefit these composers. Emerging solo recitalists need career guidance and management assistance. Talented American conductors with hopes of obtaining posts with major orchestras warrant increased performance opportunities. Jazz artists merit greater recognition, more consistent bookings and greater exposure, especially through the media.

Ensembles: Orchestras need more time to devote to activities that assist their artistic development, with less concern for producing maximum revenue at the box office. Smaller ensembles need broader sponsorship, allowing them to expand their home concert seasons, increase their touring capabilities, and reach more people. New Music ensembles remain risk-prone because of the unfamiliar nature of their repertoire. Continued exposure is essential. Choral ensembles need more opportunities to perform with orchestras; the number of paid professionals must be increased; touring opportunities need broadening. Jazz ensembles need additional media exposure and private sector recognition and support. All smaller ensembles need improved management skills.

Presenters: Nonprofit presenters, especially the smaller ones, need assistance in developing sounder bases of support and larger audiences. A likely result would be more adventuresome programming and the presentation of more emerging American artists to a broader spectrum of the American public.

Recording: Nonprofit companies that record American musicians performing American music need assistance with distribution and marketing. Works of the nation's finest composers (past and present) merit recording by outstanding American vocalists, instrumentalists and ensembles, for historical preservation and greater availability to audiences.

Professional Training: Institutions need to produce more broadly educated young professionals and realistically address the gap between formal training and career entry.

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Preservation and Archiving: Information on the availability and location of repositories of musical scores, manuscripts, and recordings needs to be gathered and circulated so that it is available to specialists and the broader public. Recordings of significant performances of American music merit preservation and general release so that they can be more widely available.

Program Response and Category Descriptions

The Program encourages the highest artistic and administrative standards through its support of symphony and chamber orchestras, choruses, and smaller vocal and instrumental ensembles in various genres. Its grants provide incentives for the engagement of young conductors; the commissioning and performance of new works; career entry assistance to emerging solo recitalists; performance and study opportunities for jazz artists (apprentice and professional); appropriate recognition of jazz masters; recording opportunities (of American music) for solo, duo and ensemble performers; the presentation of talented young artists and ensembles; and wide availability to the American people of a range of musical styles and traditions. It also helps bridge the gap between training and career entry through special residencies.

Initiatives in response to the field's needs include: an orchestra touring program for major orchestras; assistance to outstanding American vocalists, instrumentalists and ensembles for the recording of complete sets of works by America's finest composers (past and present); support to nonprofit recording companies as they continue their efforts at becoming more effective in the recording and distribution of American music; consideration of ways to assist and strengthen the administration and management of American choral ensembles; and the provision of jazz technical assistance to jazz artists and ensembles through the field's national service organization.

The Program, through support of presenters of diverse musical programming, seeks to stimulate a wider variety of musical performances and to reach broader audiences (especially with new American works).

1. Ensembles

This category supports the artistic and administrative development of symphony and chamber orchestras, chamber music/new music and jazz ensembles, and choruses. Support is designed to raise performance standards and to broaden the repertoire, as well as to encourage the employment of young American artists, especially conductors. Support is also provided for outreach programs and consortia of three or more presenter organizations in commissioning new works and guaranteeing their performance. Composers' residencies are also supported under this category.

In FY 87 we anticipate awarding 333 grants out of 535 applications aggregating $8,950,000 vs. 336 grants out of 503 applications aggregating $10,650,000 awarded in FY 86.

Example - Orchestras: In FY 85 a grant of $25,000 was awarded to the Baton Rouge Symphony, LA, to continue engaging a core orchestra of eight full-time

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string players to perform with the full orchestra and provide other services to the community. Such services included regional recitals, in-school classroom performances and human development activities with a variety of special disabled or disadvantaged groups in south Louisiana. More than 200 presentations were made by the resident string quartets. The program was designed to complement the existing curricula and therapies of the various groups served. The string quartets have received favorable responses to the activities associated with the human development program.

Example - Choruses: In FY 84 a first-time grant of $10,000 was awarded to the Musical Arts Association (Cleveland, OH, Symphony Chorus) to support increased salaries for the artistic staff and for voice coaching sessions and master classes by visiting professionals. With the Endowment's assistance the Cleveland Symphony Chorus has continued to provide sustained high quality nonprofessional choral art, performing an average of sixteen times per year to total audiences of approximately 34,000.

Example - Chamber Music/New Music Ensembles: In FY 85 the Atlanta Virtuosi in Atlanta, GA, received $1,700 from the Endowment to help support the Perimeter Mall Spring Sundays concert series. This series has enriched the Atlanta community's awareness and appreciation of live chamber music performance for four consecutive years. These weekly presentations have become major events in the northern part of the city, drawing audiences made up of all ages and socioeconomic groups. Every concert had at least 350 persons in attendance, growing to 500 per concert toward the end of the series.

Example - Consortium Commissioning: In FY 83 the Pittsburgh New Music Ensemble in Pittsburgh, PA, received $15,000 to commission Ellen Taafe Zwilich, first woman composer recipient of the Pulitzer Prize (1983); Wil Ogdon, former recipient of two University of California Creative Arts Fellowships and a Fulbright grant; and Mario Davidovsky, Pulitzer Prize recipient (1971) to compose works for small ensembles. These works will also be performed by Collage (Boston, MA) and Sonor (San Diego, CA). Without such support, these ensembles would be unable to commission works from these distinguished composers.

2. Fellowships

Under this category, support is provided for composers to create new works, complete works in progress, and collaborate with other creative artists such as librettists and choreographers. The category also supports individual jazz performers and composers, provides opportunities for jazz musicians to study with professional artists, and recognizes jazz masters. Solo recitalists are also assisted in advancing their professional careers.

In FY 87 we anticipate awarding 115 grants out of 1,225 applications aggregating $800,000 vs. 112 grants out of 1,184 applications aggregating $950,000 awarded in FY 86.

Example - Composers Fellowships: In FY 84 Donald Erb of Bloomington, IN, received $9,000 to write a clarinet concerto. The work premiered to highly favorable critical acclaim in May 1985 (Richard Stoltzman, soloist, and the Academy of London Orchestra), as part of the American Artists Series. Additional performances are being negotiated and a recording is planned.

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Example - Jazz Fellowships: In FY 84 a study grant of $2,500 was awarded to David Kopplin in Colorado Springs, CO, to study jazz drumming with Peter Donald. Mr. Kopplin reported that, in addition to improving his drumming and improvisational techniques, he found the experience to be immeasurably useful to his career. One of the benefits of the grant was that he was given his first opportunity to focus only on study and practice, rather than having to fit it into a busy work schedule.

Example - Solo Recitalists Fellowships: In FY 85 a fellowship award of $10,000 was awarded to William Doppmann in Tacoma, WA, to support the presentation of a recital at Alice Tully Hall, New York City. The recital is the second of three based on the theme A Pianist-Composer Looks at Pianist-Composers. The recitals include works by pianist-composers from the past (Bach, Schumann, Liszt, and Rachmaninoff), the performer himself, and other contemporary composers. In order for the recipient to continue his efforts at presenting himself in a dual capacity, exposure to and critical comment from the New York musical community is essential.

3. Presenters/Festivals

This category is designed to bring high quality music performances to the widest possible public. It encourages the presentation of a variety of musical genres and styles, including new American music. Programs assist presenters and presenting organizations in providing performances of chamber music/new music ensembles, jazz ensembles, and solo recitalists. It supports organizations presenting a single musical genre, two or more different kinds of musical events and genres, and assists the artistic and administrative costs of music festivals.

In FY 87 we anticipate awarding 255 grants out of 385 applications aggregating $2,000,000 vs. 279 grants out of 365 applications aggregating $2,400,000 awarded in FY 86.

Example - Chamber Music/New Music Presenters: In FY 84 a grant of $7,000 was awarded to the University of Hawaii at Manoa, in Honolulu, HI. Support was used to present the Los Angeles Piano Quartet, an emerging American chamber ensemble, in a 14-day residency on the islands of Kauai, Oahu, Molokai, Maui, and Hawaii. The Quartet performed six concerts and eighteen educational services. It gave five presentations for elementary students in which each musician visited a classroom individually for fifteen minutes in order to introduce himself and his instrument. The classroom visits were followed by a 20-minute concert illustrating how the instruments worked together as an ensemble. The Endowment's grant enabled the sponsors to offer these educational services without raising ticket prices.

Example - Multi-Music Presenters: In FY 85 a grant of $4,100 was awarded to Arts Alaska, Inc., in Anchorage, AK, for the presentation of statewide tours by a chamber ensemble, a jazz ensemble, and a solo recitalist. Each of the two ensembles toured for three weeks, presenting nine public performances and educational activities in each community. During a five-week tour, the solo recitalist performed fifteen public concerts and conducted educational activities in each community reached by the tour.

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Example - Jazz Presenters: In FY 84 a grant of $40,000 was awarded to Clark College in Atlanta, GA, to support the Black College Jazz Network Tour during the 1984-85 season. Nine historically black colleges in the Southeast participated in a consortium which block-booked master jazz artists to perform in public concerts and workshops on the various campuses. The concerts attracted the support of national corporate sponsors and overflow crowds, sometimes forcing relocations to larger facilities. Students received hands-on instruction and interacted individually with jazz greats, adding a high level of excitement to the experience.

Example - Music Festivals: In FY 85 a grant of $6,900 was awarded to the New Hampshire Music Festival in Centre Harbor, NH, to support artists' fees. The festival took place from July 9 through August 17, 1985 and included a series of six orchestra concerts (under the leadership of Thomas Nee), a series of six chamber music concerts, performances of Haydn's Creation, four Composers-in-Residence and a Lunch with an Artist series. The season included three world premieres of the works of the American composers who were in residence. The 1985 season represented a record number of series tickets sold (925 Orchestra, 92 Chamber). The 1985 season showed increases of 7 percent in series tickets and 10 percent in single sales over 1984. The 1985 season marked the festival's first commissioning effort -- with American composer Francis Thorne.

Example - Solo Recitalists Presenters: In FY 84 a grant of $4,000 was awarded to the Saint Louis Classical Guitar Society, St. Louis, MO, to support artists' fees for presenting emerging American guitar recitalists during the 1984-85 season. Performances included music for the baroque and classical guitar, as well as contemporary Cuban and American music. Two performances were attended by a total audience of approximately 600 people, recorded by a St. Louis local radio station for replay, and favorably reviewed by the St. Louis newspapers.

4. Training/Recording/Centers/Special Projects

Professional training and career development for young talented musicians are supported under this category. Assistance is also provided for the recording and distribution of American music and support is given to centers for new music, enabling composers to have ready access to scores and to new technological equipment.

In addition, the category responds to innovative and exemplary projects that will have a broad impact on the music field and that are not eligible under other categories described in the Music Program's guidelines.

In FY 87 we anticipate awarding 104 grants out of 235 applications aggregating $1,350,000 vs. 103 grants out of 220 applications aggregating $1,300,000 awarded in FY 86.

Example - Music Professional Training: In FY 84 a grant of $26,900 was awarded to the Marlboro School of Music in Marlboro, VT, to support a program of scholarship aid for young professionals (many of whom have recently completed their formal conservatory training) and to support a program of scholarship and fellowship grants to more experienced young artists who have demonstrated leadership qualities. The program, which took place from

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June 24 through August 13, 1984, joined young professional musicians with a limited number of experienced, internationally known artists to study, explore, and perform. Participants studied approximately 170 chamber works of which 72 were performed in public. Ensembles are made up of artists of diverse ages and backgrounds. Included among the 64 composers represented were the Americans Carter, Harbison, Husa, Ives, Laderman and Piston. Many musicians who participated in the Marlboro program occupy principal positions in this country's major symphony orchestras, tour as concert soloists or as members of leading chamber music ensembles, play a prominent role in other chamber music series or festivals, or teach at conservatories and universities.

Example - Career Development: In FY 84 a grant of $60,000 was awarded to Young Concert Artists, in New York City, to support the organization's nationwide services to American solo recitalists, including booking and management services, promotion and publicity materials, residency training, and artistic and career direction guidance. The 1984-85 New York Series consisted of six concerts, which included the debuts of three of the winners of the 1984 Young Concert Artists annual auditions and three reappearances. Four concerts were presented in Washington, DC, at the Kennedy Center. The 1985 series marked the sixth year of Young Concert Artists in that city. Attendance at the 475-seat theater in Washington averaged 400. In New York City, at the 92nd Street Y's 916-seat concert hall, attendance averaged 750.

Example - Music Recording: In FY 85 a grant of $4,200 was awarded to the New School of Music in Philadelphia, PA, for a recording by the Chestnut Brass Company of music of Philadelphia's early 19th-century black composers and bandmasters. The years 1825-50 saw the rise of brass bands in the United States. Some of the best and most important were the black ensembles in Philadelphia, featuring composer-performer-band leaders Francis Johnson, A. J. R. Connor, James Hemmenway, and Isaac Hazzard. Scores have been reconstructed for the works which will be performed and recorded on period instruments.

Example - Services to Composers: In FY 84 the Charles Ives Center for American Music in Roxbury, CT, received $4,800 to support the activities of the fifth annual summer program of the Center for American Music. The 24 composers that were in residence for the program had the opportunity to hear each work rehearsed and performed in a public concert.

Example - Centers for New Music Resources: In FY 84 Stanford University in Stanford, CA, received $5,800 to upgrade the master mixing console and add high quality audio to their existing computer terminals at the Center for Computer Research in Music and Acoustics. The addition of this equipment has given composers working at the Center (most of whom work independently, with no Stanford University affiliation) the capabilities needed to realize their compositions from beginning to end digitally without having to use analog methods. Between 1983-85 forty-one works were realized at the Center.

Example - Special Projects: In FY 84 a grant of $15,200 was awarded to the Chamber Music Society of Lincoln Center in New York City, to support the Together With Chamber Music series of concerts and lecture-demonstrations for junior and senior high school students. Performances were preceded by informal

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discussions of the works on the program and followed by question-and-answer sessions. A total of 3,060 students and 349 teachers from 46 schools participated in the program, representing an 8 percent increase in the number of students, a 26 percent increase in the number of teachers and an 18 percent increase in the number of schools over the 1983-84 season. Attendance increased significantly throughout the season and a group of volunteers has been organized to communicate directly with the schools early in the season in order to increase attendance. This was the first year that the series was expanded to five concerts from four and due to the positive response, the five-concert format will remain.

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NATIONAL ENDOWMENT FOR THE ARTS

OPERA-MUSICAL THEATER PROGRAM

APPLICATION/GRANT RELATIONSHIP & FUNDING IMPACT: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

	FY 1985			FY 1986			FY 1987		
CATEGORY	APPL	GRANTS	AMOUNT	APPL	GRANTS	AMOUNT	APPL	GRANTS	AMOUNT
NEW AMERICAN WORKS	97	33	519	100	32	500	115	29	500
PRODUCERS GRANTS	41	12	100	39	9	100	42	10	100
PROFESSIONAL COMPANIES a/	121	83	4,228	130	92	4,450	138	90	3,600
REGIONAL TOURING	26	22	408	32	24	400	35	16	300
SERVICES TO THE ART	17	14	544	16	13	450	17	8	400
SPECIAL PROJECTS	26	9	154	21	11	200	40	16	200
PROGRAM TOTAL	328	173	5,953	338	181	6,100	387	191	5,100

CATEGORY DISTRIBUTION BY FUND TYPE: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

	FY 1985			FY 1986			FY 1987		
CATEGORY	DEFINITE	INDEF	TOTAL	DEFINITE	INDEF	TOTAL	DEFINITE	INDEF	TOTAL
NEW AMERICAN WORKS	519	0	519	500	0	500	500	0	500
PRODUCERS GRANTS	100	0	100	100	0	100	100	0	100
PROFESSIONAL COMPANIES a/	2,228	2,000	4,228	2,450	2,000	4,450	1,600	2,000	3,600
REGIONAL TOURING	408	0	408	400	0	400	300	0	300
SERVICES TO THE ART	544	0	544	450	0	450	400	0	400
SPECIAL PROJECTS	154	0	154	200	0	200	200	0	200
PROGRAM TOTAL	3,953	2,000	5,953	4,100	2,000	6,100	3,100	2,000	5,100

a/ In FY 86 includes $100 of FY 86/87 Treasury funds carried into FY 87. In FY 87 excludes $100 of FY 86/87 Treasury funds.

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OPERA-MUSICAL THEATER

Purpose

The purpose of the Opera-Musical Theater Program is to encourage projects and seasons of the highest artistic quality in all forms of opera and musical theater, to encourage the creation and production of original work in various genres, and to broaden and enlarge audiences. The Program provides support for opera, musical theater and theater companies and makes grants to companies and individuals to stimulate the composition, development and performance of new works as well as for the revival of seldom performed works. It assists companies to tour and develop new audiences, and provides support for projects of exemplary significance to the opera field.

Needs and Opportunities in the Field

The opera and musical theater fields continue in a state of flux, which is their natural and productive environment. The continuing scarcity of new works for both opera and musical theater remains somewhat of a cause for concern; however, the number of new operas premiered in the 1984-85 season was significantly higher (7) than in 1983-84 (2). Notable also is the increasing variety of venues for new opera: for example, Virginia Opera, Norfolk, VA; American Music Theater Festival, Philadelphia, PA; Houston Grand Opera, Houston, TX; and the Opera/Music Theater Conference at the Eugene O'Neill Theater Center, Waterford, CT.

The fiscal situation for most opera companies is precarious. In an increasing number of cases, deficits are being met by withdrawing funds from endowments. Such financial insecurity can potentially result in the programming of more conservative repertoire to guarantee box office appeal. Companies, therefore, need support to encourage the production of seldom-performed works.

In musical theater, a new approach is evident in the shift to preview new musicals in a variety of nonprofit institutions around the country. In the 1984-85 season new works were seen, among other places, at the American Repertory Theater, Cambridge, MA; at La Jolla Playhouse, La Jolla, CA; and Lenox Arts Center, Lenox, MA rather than in New York City and the "tryout" cities of New Haven, Boston or Philadelphia. Opera, musical theater and theater companies throughout the country are generating new musicals, providing new opportunities for American composers and lyricists such as Rupert Holmes, James Lapine, William Finn, and Stephen Paulus, whose work was once seen mainly in New York City.

Program Response and Category Descriptions

The Program assists in maintaining and strenghthening the artistic excellence of professional organizations that produce opera and musical theater. Over two-thirds of the Program's funds will be awarded to these organizations. It continues to support companies which tour opera and musical theater, particularly to areas where there is little access to live performance.

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Through enhanced emphasis in the FY 87 guidelines, the Program continues its commitment to support the creation, development and production of new American works, as well as to encourage performance of seldom heard works for broader audiences. For all genres of opera and musical theater, the Program assists projects submitted by both organizations and independent producers. In response to increased workshop activity by opera, musical theater and theater companies nationwide, the Program continues its support for the creation of new works through this process.

The artistic associates subcategory (introduced as a pilot program in FY 86 under the Special Projects category), enables professional opera, musical theater and/or theater companies to strengthen their artistic programs by engaging artists whose exceptional knowledge and talents can lend guidance to the artistic direction of the company. In turn the artists will benefit by enjoying a sustained period of time to practice and develop their craft.

1. New American Works

The Program seeks to encourage the creation, development, rehearsal and production of new American opera and musical theater works as well as to encourage the production of seldom produced works. By doing so, it hopes to make audiences more aware and appreciative of such works and thereby to encourage their incorporation into the repertoire. In FY 87 we anticipate awarding 29 grants out of 115 applications aggregating $500,000 vs. 32 grants out of 100 applications aggregating $500,000 awarded in FY 86.

Example: In FY 84, a grant of $35,000 was awarded to the Minnesota Opera Company in Saint Paul, MN, to rehearse and produce the world premiere of the full-length opera, Casanova's Homecoming, by American composer Dominick Argento. The premiere performance was held at the Ordway Music Theatre in April 1985 to wide critical acclaim. This was the company's first coproduction with the Saint Paul Chamber Orchestra, and also its first with the New York City Opera, where the work received its New York premiere in the fall of 1985. The Minnesota Opera Company has a distinguished history of performance of new works by American and other composers.

2. Producers Grants

The Producers Grants category supports independent producers, especially those who work outside established institutions, to commission and/or develop a new opera or musical theater work. In FY 87, we anticipate awarding 10 grants out of 42 applications aggregating $100,000 vs. 9 grants out of 39 applications aggregating $100,000 awarded in FY 86.

Example: In FY 83, a grant of $15,000 was awarded to Heridee Stein of New York City to support the creation of a new musical entitled Nezha based upon an ancient Chinese legend, Romance of the Canonized Gods, with book, music and lyrics by Edward Barnes. During the 1983-84 season, Mr. Barnes wrote the full-length opera designed for opera singers, ballet dancers and young performers. A reading of this new opera, sponsored by the Eugene O'Neill Theater Center in Waterford, CT, and the First All Children's Theater in New York City, was held in October 1984 to very positive response. Ms. Stein, in

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cooperation with the Minnesota Opera in Saint Paul, MN, conducted a workshop production of Nezha in November 1985 at the George Street Playhouse in New Brunswick, NJ. The Minnesota Opera Company has expressed an interest in producing Nezha when it is ready.

3. Professional Companies

This category assists professional, not-for-profit organizations of the highest artistic quality and of national or regional significance by helping ensure the maintenance and strengthening of artistic quality in opera and musical theater. In FY 87, we anticipate awarding 80 grants out of 138 applications aggregating $3,600,000 vs. 92 grants out of 130 applications aggregating $4,450,000 awarded in FY 86.

Example: In FY 84, a grant of $156,025 was awarded to the Opera Assocation of New Mexico/Santa Fe Opera for its apprentice programs for singers and technicians, and for the engagement of American artists during the 1984-85 season. The apprentice program for singers, currently in its twenty-ninth consecutive year of operation, annually gives forty young American singers (chosen from eight hundred applicants) professional training essential for their transition from academic studies to stage careers. The apprentice program for theater technicians offers intermediate and advanced level instruction and practical experience in scenery construction, costume and wig fabrication, and stage lighting. These two programs are among the best apprenticeships available nationally to nurture professionals in the field of opera. Thirty-three American artists performed with the Santa Fe Opera during the 1985 season, a reflection of the organization's long-standing commitment to offering American talent a showcase in which to perform in their own country.

4. Regional Touring

This category helps professional companies to tour opera and musical theater productions to smaller cities and areas where there is little or no access. In FY 87 we anticipate awarding 16 grants out of 35 applications aggregating $300,000 vs. 24 grants out of 32 applications aggregating $400,000 awarded in FY 86.

Example: In FY 84, a grant of $3,000 was awarded to the Michigan Opera Theatre in Detroit, MI, for the 1984-85 touring season of its Opera-in-Residence Program which presents fully staged productions statewide. This touring company's mission is to reach segments of the population which ordinarily would not have access to live opera or musical theater events. Its residencies include an entire week of in-school performances, lecture demonstrations, master classes, and workshops. The 1985 nine-week spring tour brought opera to communities in southeastern and western portions of Michigan including Anchor Bay, Detroit, Flint, Grand Haven, and South Haven, as well as Escanabe, Iron Mountain, Saint Ignace, Bark River, and Saulte Saint Marie in the upper peninsula.

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5. Services to the Art

This category is designed to assist organizations that provide professional training or provide essential services to the opera-musical theater field. In FY 87 we anticipate awarding 8 grants out of 17 applications aggregating $400,000 vs. 13 grants out of 16 applications aggregating $450,000 awarded in FY 86.

Example: In FY 84, a grant of $4,434 was awarded to the American Music Center in New York City for the cataloguing of a collection of published and unpublished opera/musical theater scores, audio and video tapes. Such a documentary catalogue is vital to an understanding of one of the United States' most significant art forms. The American Music Center is a primary resource for composers and the general public, and is a central gathering place for information on American composers.

6. Special Projects

This category allows organizations and individuals to pursue outstanding, exemplary ideas that advance the forms of opera and musical theater. Concert opera projects and artistic associates are also funded under this category. In FY 87 we anticipate awarding 16 grants out of 40 applications aggregating $200,000 vs. 11 grants out of 21 applications aggregating $200,000 awarded in FY 86.

Example: In FY 84, a grant of $16,000 was awarded to the Lyric Opera Center for American Artists in Chicago, IL, to support the establishment of a new three-year residency program for a composer-in-residence, providing a talented young composer the opportunity to work with the opera company on a sustained basis. This project has been initiated to nurture American composers and teach them the theatrical crafts of opera, so they can write works which realistically address the demands of the stage. The work developed will be produced in a workshop presentation and, if appropriate, in a fully staged production. William Neil of Pontiac, MI, winner of the Prix de Rome, was selected as the first Composer-in-Residence. He began his residency on January 30, 1984, and was involved with the productions of the 1984-85 season while also creating his own new work, as yet untitled. On June 28, 1985, a workshop of his new opera took place, followed by a panel discussion of the work. Production by the Lyric Opera of Chicago of this opera is projected for June 1986.

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NATIONAL ENDOWMENT FOR THE ARTS

THEATER PROGRAM

APPLICATION/GRANT RELATIONSHIP & FUNDING IMPACT: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

CATEGORY	FY 1985			FY 1986			FY 1987		
	APPL.	GRANTS	AMOUNT	APPL.	GRANTS	AMOUNT	APPL.	GRANTS	AMOUNT
ARTISTIC ADVANCEMENT	79	22	1,357	90	19	1,600	30	14	1,100
NATIONAL RESOURCES	53	30	1,304	60	32	1,100	60	29	950
PROFESSIONAL THEATER COMPANIES	384	186	7,338	385	185	7,300	385	185	6,000
SUPPORT TO INDIVIDUALS	412	31	442	397	26	500	345	11	350
PROGRAM TOTAL	930	269	10,641	992	261	10,700	820	247	9,200

CATEGORY DISTRIBUTION BY FUND TYPE: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

CATEGORY	FY 1985			FY 1986			FY 1987		
	DEFINITE	INDEF	TOTAL	DEFINITE	INDEF	TOTAL	DEFINITE	INDEF	TOTAL
ARTISTIC ADVANCEMENT	1,357	0	1,357	1,600	0	1,600	1,100	0	1,100
NATIONAL RESOURCES	1,304	0	1,304	1,100	0	1,100	950	0	950
PROFESSIONAL THEATER COMPANIES	7,338	0	7,338	7,300	0	7,300	6,000	0	6,000
SUPPORT TO INDIVIDUALS	442	0	442	500	0	500	350	0	350
PROGRAM TOTAL	10,641	0	10,641	10,700	0	10,700	9,200	0	9,200

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THEATER

Introduction

Following consultation with panelists subsequent to the submission of the FY 86 Congressional budget request, the Endowment reorganized the Theater Program's categories for 1986-87 by consolidating ten categories (and six subcategories) into four categories (and eight subcategories). The new structure provides greater coherence and will assist the field in more easily understanding the guidelines.

A comparison follows:

FY 85	FY 86
1. Companies	1. Companies
2. Playwrights	2. Individuals
Fellowships	Playwrights
Commissions	
3. Director Fellows	Director Fellows
4. Mimes	Mimes
5. National Resources	3. National Resources
Services	Services
Publications	
6. Training	Training
7. Touring	Presenters
	4. Artistic Advancement
8. Ongoing Ensembles	Ongoing Ensembles
9. Special Projects	Special Projects
10. Translators	
Fellowships	
Commissions	

With the exception of Fellowships for Translators, which is being dropped because of the low number of applications received, the kinds of activities supported remain the same. Those that are not apparent in the revised list are covered as follows: "Touring" was renamed "Presenters," "Special Projects" will support commissions for plays and translations, the hiring of artistic staff members ("Artistic Associates"), and other special projects. Publications can be supported under "Services."

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Purpose

The purpose of the Theater Program is to encourage excellence in the art form and access by audiences to the highest quality theater performances. It assists professional artists, primarily in theater companies, supports training and career development of the most talented individuals, and promotes activities which reach new audiences and improve the environment for professional theater.

Needs and Opportunities in the Field

Recent decades have seen the rise of the nonprofit theater as a creative home for artists. This development complemented the metamorphosis of Broadway which now functions primarily as a showplace for works created elsewhere. Over its short 30-year history, the nonprofit theater movement has accomplished a great deal, artistically and institutionally. The field could be said to be completing its adolescence, and attention is turning to advanced artistic accomplishment. Attention is being given to artists' creative and material conditions, to ways of encouraging institutions to be flexible and open to innovation, and to raising standards to the highest level. Artistic vitality, professional respect for artists, and increased financial support remain the main areas of concern.

Program Response and Category Descriptions

The Program's categories of support are divided into four broad areas, the first two of which -- support of professional theater companies and support of individual artists -- are focused on basic ongoing needs. National Resources supports a wide range of activities which reach new audiences and improve the climate under which theater art can flourish. The fourth area, Artistic Advancement, encourages innovative and exemplary artistic projects which have the potential for significant impact nationally.

The major initiative of the Program, Ongoing Ensembles, was established in FY 84. It originally provided support to eight theaters; a ninth was added in FY 85.

1. Artistic Advancement

This category is designed to assist unusually meritorious artistic projects which are beyond each theater's normal financial capabilities; it seeks to expand the scope of possibilities. Grants to support the creation or strengthening of ongoing ensembles attempt to preserve the ensemble approach drawing attention to its artistic values, its advantages for artists' conditions, and the need for enhanced financial support. Grants for special projects respond to the best speculative thinking of the artists, and can address unusual cast requirements, residencies, commissions, publications, or any other unusually meritorious project not within normal capabilities. In FY 87, we anticipate awarding 14 grants out of 30 applications aggregating $1,100,000 vs. 18 grants out of 50 applications aggregating $1,600,000 awarded in FY 86.

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Example: In FY 84 a grant of $310,000 was awarded to the Washington Drama Society, Washington, DC, for strengthening of the resident ensemble at the Arena Stage. The grant, the first in a potential sequence of five, was given to increase employment duration and compensation for ensemble members, to enlarge the ensemble, and for workshop training during the summer. The grant period is now under way with the 1985-86 season, and theatergoers already can see the beneficial effects: more flexible casting and an enhanced sense of ensemble playing. A major article in the Washington Post brought public attention to these values and to the project's significance as a model for the field -- it is the nation's first year-round company, working and developing its skills without seasonal interruption.

Example: In FY 83 a grant of $40,000 was awarded to the Theatre Communications Group (TCG) of New York City for support of a Hispanic Translation Project. TCG is the national service organization for the nonprofit theater field, and as such is well-placed to accomplish many-faceted projects that require central coordination. This project addresses the fact that a rich heritage of classical and modern Spanish-language dramas is virtually unknown to American audiences and artists. With the aid of this grant, TCG is encouraging theaters to consider plays not currently available in English. Six theaters have been helped to commission translations, and the first issue of a new TCG publication, Escenarios/Scenarios, provided English-speakers with synopses of ten classic and contemporary plays from Spain, Argentina, Brazil, Chile and Mexico.

2. National Resources

This category is designed to encourage activities which have a broad impact on the current and future theatrical environment. Grants to service organizations and publishers address communications and technical assistance needs, and are particularly effective in raising artistic standards and overcoming artistic isolation. Grants to selected professional training programs reinforce the importance of good training for artists and improve the quality of training. Support for theater presenters, often flowing through state arts agencies and their regional consortia, expands availability of professional productions in areas not otherwise well-served and encourages presenters to be artistically adventurous on behalf of their audiences. In FY 87, we anticipate awarding 29 grants out of 60 applications aggregating $950,000 vs. 32 grants out of 60 applications aggregating $1,100,000 awarded in FY 86.

Example: In FY 84 a grant of $10,000 was awarded to the League of Professional Theatre Training Programs of New York City. This grant helped the League to arrange the 1985 Design Portfolio Review, during which professional designers and directors met with the best graduating students from design training programs to critique their work and to expose it to potential employers in the field. The portfolio review is a major resource to the young designers, who receive not only a master class but enhanced employment prospects. It also is a major resource to the field in identifying young scene, costume, and lighting designers of promise. The design programs are located throughout the country -- in such states as California, Connecticut, Massachusetts, North Carolina, Pennsylvania, Texas, Washington, and Wisconsin -- and thus draw students from diverse locales.

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Example: In FY 83 a grant of $30,000 was awarded to the Mid-America Arts Alliance (M-AAA) of Kansas City, MO, to support presentations of the American Repertory Theatre (ART), Cambridge, MA, and the Missouri Repertory Theatre (MRT), Kansas City. M-AAA is a regional partnership of the state arts agencies of Arkansas, Kansas, Missouri, Nebraska, and Oklahoma; it supplied partial fee support to presenters in those states for ART's Sganarelle by Moliere and Six Characters in Search of an Author by Pirandello, and for MRT's Come Back, Little Sheba by Inge. Ten engagements drew attendance of 8,104, in cities where little professional theater is otherwise available: Lincoln, NE, Tulsa, OK, Springfield, MO, Liberty, MO, Kearney, NE, Hays, KS, Ottawa, KS, Omaha, NE, and Manhattan, KS.

3. Professional Theater Companies

Because theater is a collaborative art form, the best way to encourage the artists' creativity is through support of the structures which best facilitate their collaborations. Funding in this category is limited to those professional theater companies producing work at the highest artistic level and which are of national or regional significance. On the average, these grants offset about three percent of expenses, and most are below that level. In FY 87 we anticipate awarding 185 grants out of 385 applications aggregating $6,800,000 vs. 185 grants out of 385 applications aggregating $7,500,000 awarded in FY 86.

Example: In FY 84 a grant of $25,000 was awarded to the Alliance Theatre of Atlanta, GA, to support the 1984-85 productions of the Atlanta Children's Theatre. The Alliance provides a useful model for the nation in the equal importance it attaches to its program for adults and its program for young audiences. Furthermore, the young audience productions themselves are of a very high standard, and are featured on the mainstage rather than in a secondary space. Two productions -- The Emperor and the Nightingale and The Prince and the Pauper -- were presented on the mainstage. These productions plus two others -- The Beast and The Land Between -- also were presented on tour throughout Georgia and Alabama. Mainstage and tour attendance each exceeded 68,000, for a total of more than 136,000.

4. Support to Individuals

This category is designed to assist individual theater artists in their career development and in the creation of new work. Fellowships for playwrights encourage future voices for the stage by providing talented writers the opportunity to concentrate on their craft. Director fellows grants address a critical talent drain by helping stage directors to make the difficult transition between training and a established career. Fellowships for mimes encourage the advancement of movement theater by providing creative time for the most talented solo performers. In FY 87, we anticipate awarding 19 grants out of 345 applications aggregating $350,000 vs. 26 grants out of 397 applications aggregating $500,000 awarded in FY 86.

Example: In FY 82 a grant of $10,000 was awarded to the Arizona Theatre Company of Tucson, AZ to underwrite the cost of engaging Jon Cranney as a Director Fellow for the 1982-83 season. Cranney, who until that time had a

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fine career as a stage manager and production manager, was given significant exposure to stage directing and to the artistic aspects of theater leadership. In 1985, Cranney was appointed Artistic Director of the Children's Theatre Company and School of Minneapolis, MN a flagship theater for young audiences.

Example: In FY 83 a grant of $12,500 was awarded to playwright Eduardo Machado of South Pasadena, CA, to set aside time for writing or other activities which would advance his career. Machado's play, The Modern Ladies of Guanabacoa, was produced to favorable reviews by New York's Ensemble Studio Theatre and was published by the Theatre Communications Group. The Spanish Theatre Repertory, also of New York City, has translated the play into Spanish for production in the spring of 1986.

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NATIONAL ENDOWMENT FOR THE ARTS

VISUAL ARTS PROGRAM

APPLICATION/GRANT RELATIONSHIP & FUNDING IMPACT: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

CATEGORY	FY 1985			FY 1986			FY 1987		
	APPL	GRANTS	AMOUNT	APPL	GRANTS	AMOUNT	APPL	GRANTS	AMOUNT
ART IN PUBLIC PLACES	130	26	497	91	21	450	100	12	300
SPECIAL PROJECTS	29	13	403	30	5	150	30	3	100
VISUAL ARTISTS FELLOWSHIPS	5,607	259	2,930	5,700	270	3,275	5,800	274	3,150
VISUAL ARTISTS FORUMS	129	64	419	119	58	375	130	37	300
VISUAL ARTISTS ORGANIZATIONS	214	144	1,952	195	130	1,950	220	122	1,650
PROGRAM TOTAL	6,109	504	6,201	6,133	492	6,200	6,300	450	5,500

CATEGORY DISTRIBUTION BY FUND TYPE: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

CATEGORY	FY 1985			FY 1986			FY 1987		
	DEFINITE	INDEF	TOTAL	DEFINITE	INDEF	TOTAL	DEFINITE	INDEF	TOTAL
ART IN PUBLIC PLACES	497	0	497	450	0	450	300	0	300
SPECIAL PROJECTS	403	0	403	150	0	150	100	0	100
VISUAL ARTISTS FELLOWSHIPS	2,930	0	2,930	3,275	0	3,275	3,150	0	3,150
VISUAL ARTISTS FORUMS	419	0	419	375	0	375	300	0	300
VISUAL ARTISTS ORGANIZATIONS	1,952	0	1,952	1,950	0	1,950	1,650	0	1,650
PROGRAM TOTAL	6,201	0	6,201	6,200	0	6,200	5,500	0	5,500

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VISUAL ARTS

Purpose

The Visual Arts Program's principal purpose is to encourage the creation of quality visual art through support for exceptionally talented individual artists. Fellowships are awarded to painters, sculptors, printmakers, photographers, craftspersons, and artists working in new genres. Organizations which provide visual artists with spaces where they can create and exhibit their work and exchange ideas are also assisted. Grants also support the commissioning of public art projects and public forums on contemporary visual arts issues.

Needs and Opportunities in the Field

Since most visual artists must rely on other employment for their economic livelihood, uninterrupted time to dedicate to their creative work is often limited. The most recent Research Division study of the economic support of visual artists reported that the majority of visual artists surveyed in four cities in 1978 were supported by secondary occupations rather than by sales of their work. Most of this other employment was part-time and art-related, over half involved teaching, and median income was less than $5,000. The artist's median annual income from the sale of artwork was only $718. Since 1978, economic conditions for visual artists have not changed significantly, and their personal financial situations remain precarious.

Visual artists need opportunities to exhibit their work, exchange ideas with their peers, and reach audiences. Opportunities for emerging artists and for artists experimenting with untested and unmarketable ideas and materials are especially scarce. The museum and commercial gallery system can present and document only a small portion of the work of our best visual artists. Visual artists organizations, artist-run alternatives to more established exhibition outlets, encourage experimentation and presentation of new ideas about art. Due to their small scale and risk-taking nature, they are often financially unstable and sometimes ill-equipped to compete for the more traditional sources of funds available to major cultural institutions. A recently completed study (conducted by the National Association of Artists' Organizations and assisted by the Endowment) indicated that three-fourths of the organizations surveyed operate on annual budgets of less than $200,000, that fully one-third of their expenses are related directly to artists' support, and that one-fifth of their income is derived from government sources. Historically these alternative organizations have been of great importance to visual artists, often providing artists with their first exhibition or calling attention to new styles or artforms which later are picked up by the more established exhibition outlets.

Visual artists outside the country's traditional cultural centers need greater access to support and distribution systems, and visual artists in all parts of the country need more and better forums for dialogue and critical evaluation of their work. Audiences everywhere deserve more access to the work of contemporary American visual artists. Increased opportunities for visual artists to work in public contexts have come about during the last decade, accompanied by increased audience appreciation, artist experimentation, and in the case of public art projects, sometimes public controversy.

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Program Response and Category Descriptions

In an effort to reach additional visual artists of exceptional talent and to ensure that emerging artists outside the major cultural centers are reached, the regional fellowship program will continue to grow, while the established national fellowship program will be maintained at current levels. Organizations managed by and responsive to visual artists and which provide artists with an opportunity for experimentation with innovative ideas will continue to be supported. Organizations providing forums for visual artists and the public to engage in dialogue about contemporary art will continue to be assisted. In addition to support of public art projects initiated by cities and communities, new opportunities for visual artists to interact with the public will be explored jointly with the Endowment's Design Arts Program. The Visual Arts Program also plans renewed advisory efforts with the General Services Administration's and Veterans Administration's Art-in-Architecture programs.

1. Art in Public Places

Grants in this category seek to make the best contemporary art by living American artists of exceptional talent accessible in public places. In FY 87 we anticipate awarding 12 grants out of 100 applications aggregating $300,000 vs. 21 grants out of 91 applications aggregating $450,000 awarded in FY 86.

Example: In FY 83, a grant of $11,830 was made to Rapid City Fine Arts Council, SD to support a commission for Minnesota artist Andrew Leicester. The resulting piece, an environmental sculpture entitled "Toth," has become a new and welcome neighbor to the "presidents" and Chief Crazy Horse at nearby Mount Rushmore. The concrete and timber sculpture celebrates the themes of mineralogy, paleontology, ancient and modern man, and the natural forces which eroded the nearby Badlands. As this sculpture project evolved, it engendered the enthusiasm and support of almost three dozen local business firms and corporations, the South Dakota National Guard, the South Dakota School of Mines and Technology, and many individual citizens. This project was the result of an earlier small planning grant to South Dakota State University to commission six temporary public art installations in communities around the state. The town of Rapid City was so pleased with the concept suggested by the artist that it chose to convert the temporary piece into a permanent work and, in doing so, united the town with the university and business and mining communities in a common quest, to see the sculpture completed.

2. Special Projects

This category is designed to respond to new and creative ideas that will have a broad impact on the visual arts field but are generally ineligible under other Visual Arts categories. In FY 87 we anticipate awarding 3 grants out of 30 applications aggregating $100,000 vs. 5 grants out of 30 applications aggregating $150,000 awarded in FY 86.

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Example: In FY 84, a grant of $25,000 was awarded to Washington Project for the Arts (WPA), Washington, DC to support a collaborative commission for artists David Ireland of San Francisco, CA and Robert Wilhite of Los Angeles, CA to transform a dilapidated area in WPA's building into a permanent art installation which is also a functional living space. The "artists' apartment," with the space reshaped and constructed by Ireland and the furniture designed and built by Wilhite, now serves as living quarters for visiting artists invited to WPA for extended working residencies. This arrangement allows guest artists to be free of the financial and logistical burdens often posed by long-term residencies. Ireland and Wilhite constructed their piece, titled "Jade Garden," from the simplest of materials -- sheetrock, sheet metal, plywood, and marble slabs -- most of them donated by local businesses. To date 17 artists have used the apartment, and 14 more are currently scheduled for residencies ranging in length from one week to one month. They represent a variety of media, aesthetic viewpoints, and areas of the country and include sculptor/performance artist Terry Allen, Fresno, CA, photographer Nathan Lyons, Rochester, NY, and painter Edgar Heap-of-Birds, Geary, OK. One direct result of the project was the collaboration of WPA, MIT's Hayden Gallery, Cambridge, MA, and Los Angeles' Museum of Contemporary Art on a visiting artist program.

3. Visual Artists Fellowships

This category is designed to encourage the creative development of practicing professional visual artists of exceptional talent by enabling them to set aside time to pursue their work. In FY 87 we anticipate awarding 276 grants out of 5,800 applications aggregating $3,150,000 vs. 278 grants out of 5,700 applications aggregating $3,275,000 awarded in FY 86.

Example - National Fellowships: Otis Jones, a painter from Dallas, TX, received a Visual Artists Fellowship for $5,000 in FY 82. He reported that as a result of this grant he was able to create work for two major solo exhibitions, one at the Fort Worth Art Museum, and the other at the McIntosh/Drysdale Gallery in Houston. He was also included in a group show at the Galerie Simonne Stern in New Orleans, LA with two other Endowment Fellowship recipients, Sam Gummelt from Dallas, TX and Gael Stack from Houston, TX. His final report indicated that grant funds allowed him to create work of a larger scope than would have otherwise been possible. He also stated that he was able to travel to New York City and contact and maintain a continued exchange with many artists, critics, curators, and dealers which had a profound effect on his artistic development and career. In conclusion he remarked that "being awarded this grant by a committee of recognized individuals is in itself a tremendous vote of confidence. This alone may be one of the strongest positive effects for myself."

Example - Regional Fellowships: In FY 84, four regional arts organizations received funds totaling $250,000 to administer a pilot program of regional fellowships for emerging visual artists. Participating regions include: Affiliated State Arts Agencies of the Upper Midwest (Iowa, Minnesota, North Dakota, South Dakota, Wisconsin); Great Lakes Arts Alliance (Illinois, Indiana, Michigan, Ohio); Mid-America Arts Alliance (Arkansas, Kansas,

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Missouri, Nebraska, Oklahoma); and Southern Arts Federation (Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee). Now in its third year, the program has expanded to include 23 states, and future growth is anticipated. Fellowships of $3,500 were awarded in 1984 to 50 visual artists working in crafts, photography, or sculpture (fellowship areas not offered by the Endowment that year due to our biennial cycle). In addition, three touring exhibitions of recipients' work were organized and are currently traveling throughout the regions. Each Endowment cooperative agreement is matched one-to-one through a variety of sources, including funds from member state arts agencies, regional foundation and corporate contributions, and the regional arts organizations' administrative costs.

4. Visual Artists Forums

Grants in this category support projects that promote discourse about visual art. Funding enables visual artists, critics, and curators to communicate with their peers and the public about visual arts ideas and issues. Support is also available for noncommercial publications that contribute to the national dialogue on contemporary art. In FY 87 we anticipate awarding 37 grants out of 150 applications aggregating $300,000 vs. 58 grants out of 119 applications aggregating $375,000 awarded in FY 86.

Example: In FY 84, Washington State University in Pullman, WA received a grant of $5,000 for a coordinated visiting artists and critics program held at Washington State University, the University of Idaho, Moscow, ID, Spokane Falls Community College, and Cheney Cowles Memorial Museum in Spokane, WA. The grant helped to bring four nationally-known artists to this rural region and provided audience exposure to a variety of different media and ideas within the contemporary arts arena. Four institutions in three cities cooperated in the selection, planning, publicity, and funding of this lecture series. In addition to the three public lectures given by each artist, the artists had additional professional and social contact with students, artists, and the art community ranging from seminars, workshops, and individual studio critiques to discussions about how to get work shown in galleries, museums, and artist-run spaces. Approximately 1,900 people attended the lectures and additional activities. Each artist drew broad audiences, including women's groups, sociologists, and architects. This cooperative effort enabled the program to have an impact within the region far greater than could have been achieved by a single institution.

5. Visual Artists Organizations

Grants in this category support organizations which encourage individual artistic development, experimentation, and dialogue between visual artists and the public. Funds are directed to organizations that assure visual artists an integral role in policy development and programming. Support is available for programs which present contemporary visual art for the public, which enable visual artists to produce new work, and which provide visual artists with services. In FY 87 we anticipate awarding 122 grants out of 220 applications aggregating $1,650,000 vs. 130 grants out of 195 applications aggregating $1,950,000 awarded in FY 86.

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Example: In FY 84, Nexus Contemporary Arts Center in Atlanta, GA received $45,000 to support exhibitions at Nexus Gallery, the production of artists' books by Nexus Press, and the payment of honoraria to participating artists. Founded in 1973 as a storefront photography cooperative, Nexus has expanded to become a multi-discipline artists organization which currently operates Nexus Gallery, Nexus Press, a Sculpture Center, Nexus Theatre, and a Studio Artists Program for local artists. Nexus Gallery, in 1984-85, presented the work of more than 250 artists in one-person and group exhibitions. The work presented ranged from site-specific installations to video and performance presentations and represented local, regional, and national artists. Nexus Press provided facilities and residencies for four visual artists pursuing book projects and produced three artists' books as catalogues in conjunction with shows at the Gallery. In addition to operating as a working facility, Nexus Press also maintains a small bookstore and distributes its publications nationally. With the support of public, private, and corporate sponsors over the years, Nexus has been able to grow into an important regional cultural resource for the Southeast, with national impact through its exhibition and publishing programs.

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NATIONAL ENDOWMENT FOR THE ARTS

ARTS/ARTS IN EDUCATION

APPLICATION/GRANT RELATIONSHIP & FUNDING IMPACT: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

CATEGORY	FY 1985			FY 1986			FY 1987		
	APPL	GRANTS	AMOUNT	APPL	GRANTS	AMOUNT	APPL	GRANTS	AMOUNT
STATE ASE GRANTS	55	55	4,399	55	55	4,300	56	56	3,000
SPECIAL PROJECTS	162	58	1,037	170	55	1,000	180	55	1,000
PROGRAM TOTAL	217	113	5,437	225	110	5,300	236	111	4,000

CATEGORY DISTRIBUTION BY FUND TYPE: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

CATEGORY	FY 1985			FY 1986			FY 1987		
	DEFINITE	INDEF	TOTAL	DEFINITE	INDEF	TOTAL	DEFINITE	INDEF	TOTAL
STATE ASE GRANTS	4,399	0	4,399	4,300	0	4,300	3,000	0	3,000
SPECIAL PROJECTS	1,037	0	1,037	1,000	0	1,000	1,000	0	1,000
PROGRAM TOTAL	5,437	0	5,437	5,300	0	5,300	4,000	0	4,000

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NATIONAL ENDOWMENT FOR THE ARTS

EDUCATION PROGRAM

APPLICATION/GRANT RELATIONSHIP & FUNDING IMPACT: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

	FY 1985			FY 1986			FY 1987		
CATEGORY	APPL	GRANTS	AMOUNT	APPL	GRANTS	AMOUNT	APPL	GRANTS	AMOUNT
EDUCATION a/	6	6	100	1	1	100	...	...	...
PROGRAM TOTAL	6	6	100	1	1	100	...	...	...

CATEGORY DISTRIBUTION BY FUND TYPE: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

	FY 1985			FY 1986			FY 1987		
CATEGORY	DEFINITE	INDEF	TOTAL	DEFINITE	INDEF	TOTAL	DEFINITE	INDEF	TOTAL
EDUCATION a/	100	0	100	100	0	100	...	...	...
PROGRAM TOTAL	100	0	100	100	0	100	...	...	...

a/ In FY 87, included in AIE/Arts in Education.

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ARTS IN EDUCATION

Purpose

The Arts in Education Program (AIE) -- formerly called the Artists in Education Program -- is designed to encourage study of the arts as a part of basic education, from kindergarten through high school. The Program's long-term goal is to foster the adoption of substantive and sequential arts curricula in the nation's schools, thereby nurturing perceptive and committed audiences and artists of the future. FY 87 will mark the transition from a program oriented primarily to artists residencies to a program oriented to arts education more generally (of which artist residencies would be a part). This is consistent with amendments to our enabling legislation in 1985.

Needs and Opportunities in the Field

Every aspect of education is today undergoing public scrutiny, with issues of curricula, teachers, costs, and quality discussed and debated. Virtually every state is exploring changes in such areas as elementary school competencies, high school graduation requirements, college admissions requirements, teacher certification standards, and assessments of the quality of education. The arts, as a part of basic education, are receiving attention from both the education and the arts communities. Some 22 states now require instruction in the arts for high school graduation and some 44 states and special jurisdictions have changes pending in statewide arts education policies.

The Endowment's concern in this area is that 61 percent of the adult population did not attend in 1982 even once any live performance of jazz or classical music, theater, opera or musical theater, or ballet, nor did they visit an art gallery or museum. While the fact that 39 percent of American adults did so participate at least once is progress, the fact remains that for a majority of Americans, art is essentially Prime Time Television, the Top Twenty of pop music, the best seller list, etc. If the Arts Endowment is, as its statute directs, to be concerned about "high civilization" and access to the arts, it must be concerned about identifying and assisting solutions to this problem.

Our discipline programs help the best artists and arts institutions in America, and this has an obvious impact on the availability of their work to audiences. Our artist residency programs have helped provide student access to artists in many different communities across the land. But real access to the arts still remains the province of a better educated minority.

For this reason, we are exploring the possibility of stimulating efforts to affect our nation's schools and of using television to introduce young people to, and educate them in, the arts. Our effort with regard to the schools will be in partnership with state and local arts and education agencies. Congress has recognized the importance of this effort in the 1985 amendments to our enabling legislation.

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The principal problem of arts in education is one of definition. Arts in education means almost as many things as the number of people involved in talking about it. More often than not, definitions concentrate on the means of arts education rather than its goals -- in terms of student knowledge, competency, and appreciation, at specific ages. Arts education can mean playing the tuba in the football band, going to the museum on Saturday afternoon, participating in a third grade drawing class. It is rare for a school to organize course work in the various arts disciplines on a comprehensive and sequential basis.

Program Response and Category Descriptions

The Endowment has since the late Sixties supported artist residencies in educational settings (primarily schools). The FY 85 Artist Residency Grants, aggregating $4.4 million, are expected to be matched by over $20 million. In 1983-84, some 3,650,000 students and 76,000 teachers and administrators experienced the arts through the residencies of 7,400 artists in 10,500 education sites.

Notwithstanding the general success of the Artist Residency Program, it is recognized that residencies are but one mechanism to achieve art in education. In an attempt to explore how the Endowment could build on its artist residency experience in order to have a more general impact on the arts in schools and in order to nudge the schools toward making the arts a more basic part of education K-12, we held during 1984, in cooperation with the National Assembly of State Arts Agencies (NASAA), five meetings. The results of those meetings will be published jointly by NASAA and the Endowment. During FY 85, the Endowment also convened an Ad Hoc Group on Arts Education to help develop new programmatic initiatives.

Further, the Endowment, in cooperation with the United States Department of Education and the Rockefeller Foundation, worked with the Council of Chief State School Officers (CCSSO) to 1) review the conditions of arts education in each state, 2) identify promising arts education projects, and 3) conduct a meeting on arts education for the chief state school officers. The results of each of these initiatives were published by CCSSO in the Fall 1985. In addition, the Endowment and the Rockefeller Foundation, through CCSSO, competitively awarded ten $2,000 grants to state Departments of Education for arts education projects.

Recognizing that television is an essential educational tool, the AIE Program will cooperate with the Media Arts Program and the J. Paul Getty Trust in the development of an arts television series for children, ages 8 through 10. Two grants were awarded in FY 85 for development of a pilot for the series; they will be evaluated during FY 86. If deemed successful, the Endowment and the Getty Trust would continue partial assistance for a full series.

Together with others in the public and private sectors, the Program is examining a system for arts education information collection and dissemination. Ways to provide public recognition to outstanding arts education efforts by teachers and arts organizations are also under consideration.

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In FY 87, the AIE Program will begin a transition by encouraging the beginning of planning at the state level with regard to how the arts might become a more basic and sequential part of K-12 education. The Program will continue to support artist residencies and special projects, but will change its title to "Arts in Education" and encourage longer-term planning.

In FY 87 the Education Program will be phased out and its leadership activities incorporated into the new Arts in Education Program.

The AIE Program in FY 87 will have two categories:

1. State Arts in Education Grants

These grants are intended to assist artist residencies and begin the process of encouraging state and local arts and education agencies and institutions to engage in planning to explore the possibility of making the arts become a part of basic education.

In FY 87 we anticipate awarding 56 grants out of 56 applications aggregating $3,800,000 vs. 55 grants out of 55 applications aggregating $4,300,000 awarded in FY 86.

Example: The State Arts Council of Oklahoma received $90,000 in FY 84, which it matched with $549,600 in cash. Its FY 84 program involved 84 artists, 98,088 students or other participants and 3,017 teachers and administrators at 251 sites. The "Arts and Reading Comprehension Project," initiated by the State Department of Education/AIE section, began as a cooperative effort between the state arts agency and the Department of Education through the Artists in Residence Program and was developed by artists and teachers. The three-year project, currently operating in three schools, is designed to determine the effect of the study of the arts on cognitive learning. This year it will be expanded to three rural schools. Artists and teachers are planning lessons together, and are writing curriculum results. The project will be completed next year.

2. Special Projects

This category will continue to provide direct grants to arts and education institutions, including state arts agencies, for projects with regional or national significance that enhance arts as a basic in education. In FY 85, Special Projects supported model projects which, among other things enhanced the skills of teachers, enriched the learning experience of students and provided opportunities for collaboration among artists, teachers and institutions. The $1,037,000 awarded in FY 85 is expected to be matched by $2,433,000.

In FY 87 we anticipate awarding 55 grants out of 180 applications aggregating $1,000,000 vs. 55 grants out of 170 applications aggregating $1,000,000 awarded in FY 86.

Example: An FY 84 grant of $8,100 was awarded to Arizona State University, Tempe, AZ, to support its Creative Drama Video Tape and Curriculum Project.

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which developed and distributed a curriculum guide and a videotape of drama lessons with kindergarten children. One thousand copies of the curriculum guide have been printed and many were distributed at the August 1985 American Theatre Association (ATA) national convention. In addition, copies are being distributed to Arizona teachers when they participate in workshops. Copies have also gone outside the state to Los Angeles city schools, the Evanston (IL) School District and the Illinois Theatre Association. The 45-minute videotape, "Drama With the Kindergarten," was previewed at the ATA national convention, and its availability was publicized in the Children's Theatre Association of America's "CTAA Newsletter," with resulting requests for copies from Louisiana, Illinois, Texas, Florida and Washington. Future plans include the writing of a similar curriculum for grades 1-6, and the development of a teaching tape for grades 2, 4, and 6. Both projects will be a part of the ASU Longitudinal Study of Child Drama, to be completed by 1990.

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NATIONAL ENDOWMENT FOR THE ARTS

LOCALS TEST PROGRAM

APPLICATION/GRANT RELATIONSHIP & FUNDING IMPACT: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

CATEGORY	FY 1985 APPL	FY 1985 GRANTS	FY 1985 AMOUNT	FY 1986 APPL	FY 1986 GRANTS	FY 1986 AMOUNT	FY 1987 APPL	FY 1987 GRANTS	FY 1987 AMOUNT
GRANTS	23	8	2,000	17	12	2,000	30	10	2,000
SERVICES TO THE FIELD	5	3	256	4	2	200	4	2	200
PROGRAM TOTAL	28	11	2,256	21	14	2,200	34	12	2,200

CATEGORY DISTRIBUTION BY FUND TYPE: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

CATEGORY	FY 1985 DEFINITE	FY 1985 INDEF	FY 1985 TOTAL	FY 1986 DEFINITE	FY 1986 INDEF	FY 1986 TOTAL	FY 1987 DEFINITE	FY 1987 INDEF	FY 1987 TOTAL
GRANTS	2,000	0	2,000	2,000	0	2,000	2,000	0	2,000
SERVICES TO THE FIELD	256	0	256	200	0	200	200	0	200
PROGRAM TOTAL	2,256	0	2,256	2,200	0	2,200	2,200	0	2,200

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TEST PROGRAM OF SUPPORT FOR LOCAL ARTS AGENCIES

Purpose

The goals of this Test Program are:

1) To promote increased and sustained public funding at state and local levels for a) regranting to professional artists and arts organizations of high quality, particularly those with limited access to other funding sources; b) developing capital resources for local arts organizations; c) presenting performances, exhibitions, and residencies; d) building audiences; and e) providing technical assistance and services.

2) To encourage joint planning among state and local arts agencies, artists, and arts organizations and public and private sources of support for the arts.

3) To elicit a variety of imaginative proposals and provide seed funding for projects that might serve as models to other states and communities.

Needs and Opportunities in the Field

The nonprofit arts are an essentially local phenomenon. They are created, produced, presented and supported in a locality. At a time when competition for funding has increased everywhere, incentive programs are useful to encourage the growth of local public support for the arts. Since World War II there has been a substantial growth in arts activity. Concurrently, the number of local arts agencies has increased over the last two decades to respond to and help provide support for this increased activity. According to a recent survey, there are some 1,500 local arts agencies across the country; some 700 of them are under professional direction.

Over the years the Endowment has provided financial support to local arts agencies and local organizations. There are, however, recognized difficulties in attempting to make funding decisions at the national level for organizations and programs whose impact and significance are largely local.

The geographical distribution of these local arts agencies and activities is very uneven. The eastern third of the nation contains fully 65 percent of all currently operating professionally directed local arts agencies. There is a need to develop new local arts agencies in areas where none exist, and to increase the number of professionally directed local arts agencies in underserved areas.

In many communities without strong local arts agencies, there is no organized effort or pattern of local public support of the arts. Some organizations such as orchestras and museums may benefit from a high level of visibility and receive community funding while others -- chamber groups, dance companies and artists' organizations -- do not.

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Program Response and Category Descriptions

The Federal role in helping to promote the work of local arts agencies is that of a catalyst. The Test Program provides matching grants to local arts agencies and state arts agencies. Based on the first three years of grants under the Locals Test Program, some 145 local arts agencies were able to identify more than $20 million in new public funds through 31 grants. It is expected that after the grant period state and local support will enable these projects to continue without further Federal aid.

The Program will test whether the use of Federal funds provides a decisive advantage in promoting the goals of the Program. It will also test whether direct grants to local arts agencies, grants to state arts agencies for support of local arts agencies, or a combination of the two offers the best mechanism for furthering the arts.

In addition, limited funds support costs of information services, management assistance, and other services provided to local arts agency personnel.

Special attention will be focused on identifying needs and opportunities for growth and support of the arts at the local level as the Locals Test Program undergoes a major internal and external evaluation of the program to be completed within the next year.

1. Grants to Local and State Agencies

Grants may be awarded directly to local arts agencies for support of major programs or projects benefiting local arts organizations and artists. Grants are for a minimum of $150,000, with a 2-to-1 matching requirement in new local public dollars, for a three-year project period. Alternatively, a state arts agency may apply on behalf of a group of local arts agencies in its state through a consortium or partnership grant. Under this type of grant, agencies and communities unable to provide the match under direct grants may be included. The state arts agency must match each Federal dollar with an equal amount in new state funds. The combined total is then matched equally by the participating local agencies.

In FY 87 we anticipate awarding 10 direct and state/local partnership grants out of 30 applications aggregating $2,000,000 vs. 12 grants out of 17 applications aggregating $2,000,000 awarded in FY 86.

Example - Direct Grants to Local Arts Agencies: In FY 85, a grant of $375,000 was awarded to the Seattle Arts Commission. Seattle had not increased its public arts support in recent years, and the Test Program grant has successfully stimulated new public funds ($250,000 in FY 85), resulting in revitalization of the agency. Endowment and matching funds have assisted the expansion of the Commission's regrant programs to both major arts institutions and emerging organizations, plus creation of a new regrant program for individual artists and a traditional arts regrant category for ethnic and traditional arts organizations, many of which have never before received public funding. Hiring of a new staff member has allowed initiation of a technical assistance program, and a new arts education program has enhanced

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the curriculum and classroom instructional activities in 52 schools. Establishment of The Public Art Space, a collaborative gallery supported by the city, county, and state arts agencies plus the corporate sector, has increased access to the city's public art collection.

Example - State-Local Partnership Grants: In FY 86, a $155,000 grant was awarded to the North Dakota Council on the Arts on behalf of 16 participating local arts agencies. An extensive planning effort included a survey of arts needs, development of a long-range plan, and a successful campaign that advocated new levels of funding by the state and local governments. New legislation was introduced to amend the Century Code in order to allow non-home-rule municipalities to fund the arts. Support for the arts was evident as the bill passed by a wide margin in both houses. The North Dakota program assists new and developing local arts councils to increase new sources of funding, visibility, and arts programming. The regranting funds will be used to upgrade the quality of local arts and expand arts audiences through activities such as touring programs in the communities, hiring of professional artists to conduct workshops and to assist in productions, and funding artist-in-residence programs. The North Dakota plan serves as a model for planning and arts development for rural communities.

2. Services to the Field

A limited number of matching grants will be made available to national, regional or state associations of local arts agencies, colleges and universities for the purpose of providing specific services, technical assistance, professional development and continuing education programs on a regional or national basis for local arts agency personnel. In FY 87 we anticipate awarding 2 grants out of 4 applications aggregating $200,000 vs. 2 grants out of 4 applications aggregating $200,000 awarded in FY 86.

Example: In FY 85 a grant of $45,000 was awarded to the University of Minnesota's Center for Local Arts Development in Minneapolis to establish a National Local Arts Agency Leadership Institute for local arts agency managers. The first 2-1/2 week training session is scheduled for the summer of 1986. The sessions will address organizational development, administration and management; communications and community relations skills; financial and resource development; personnel management assessment techniques; and planning.

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NATIONAL ENDOWMENT FOR THE ARTS

STATE PROGRAMS

APPLICATION/GRANT RELATIONSHIP & FUNDING IMPACT: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

CATEGORY	FY 1985 APPL.	FY 1985 GRANTS	FY 1985 AMOUNT	FY 1986 APPL.	FY 1986 GRANTS	FY 1986 AMOUNT	FY 1987 APPL.	FY 1987 GRANTS	FY 1987 AMOUNT
BASIC STATE GRANTS	56	56	20,850	56	56	21,100	56	56	18,300
REGIONAL ARTS PROGRAMMING	11	11	3,117	7	7	3,050	7	7	2,600
SPECIAL PROJECTS a/	...	...	...	4	4	400	14	7	350
STATE SUPPORT SERVICES	4	4	397	2	2	300	2	2	250
PROGRAM TOTAL	73	73	24,372	71	71	24,850	81	72	21,500

CATEGORY DISTRIBUTION BY FUND TYPE: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

CATEGORY	FY 1985 DEFINITE	FY 1985 INDEF	FY 1985 TOTAL	FY 1986 DEFINITE	FY 1986 INDEF	FY 1986 TOTAL	FY 1987 DEFINITE	FY 1987 INDEF	FY 1987 TOTAL
BASIC STATE GRANTS	20,850	0	20,850	21,100	0	21,100	18,300	0	18,300
REGIONAL ARTS PROGRAMMING	3,117	0	3,117	3,050	0	3,050	2,600	0	2,600
SPECIAL PROJECTS a/	...	...	...	200	200	400	350	0	350
STATE SUPPORT SERVICES	397	0	397	300	0	300	250	0	250
PROGRAM TOTAL	24,372	0	24,372	24,650	200	24,850	21,500	0	21,500

a/ Includes support for a cooperative effort among Dance, Inter-Arts and State Programs to address presenting/touring needs. In FY 86 includes $100 of FY 86/87 Treasury funds carried into FY 87. In FY 87 includes $100 of FY 86/87 Treasury funds.

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STATE

Purpose

State Programs administers the not less than 20 percent of Program funds set aside by law for state arts agencies and regional groups of state arts agencies. Formula grants are awarded annually to 56 state and special jurisdiction arts agencies and seven regional groups upon the Chairman's approval of an application and plan for support of the arts. The role of State Programs in administering these funds is to assist state arts agencies and regional groups in supporting projects and activities which address the arts priorities of their states and regions. Experience has shown that grants which support state and regional arts priorities also serve the Endowment's mission of fostering and promoting artistic excellence and access to excellence, diversity, and vitality in the arts.

Needs and Opportunities in the Field

Due to the vast difference among the states and regions, their needs vary considerably. Needs often identified by state and regional arts agencies include support for individual artists; operating support for arts institutions; increased public visibility for the arts; a greater role for the arts in education; access to the arts through performing and visual arts touring; and arts management assistance, including staff training and computerized information processing.

Arts management assistance and access to the arts through touring are needs frequently addressed most cost-effectively on a multi-state basis through regional groups. These are of vital importance not only because they provide a means of addressing major needs, but also because regional organizations have shown an ability to use Federal funds to lever private support. Their attractiveness to private contributors has been due in part to the financial stability which their State Programs funding has provided.

Predictable funding levels have been identified as a major need of both state and regional arts agencies. Such predictability assists responsible long-range planning by these agencies and the arts institutions which they help to support.

Program Response and Category Descriptions

The funding priorities of State Programs are mainly determined by the Endowment's enabling legislation which sets aside no less than 20 percent of Program funds for the states and regions and stipulates that at least 75 percent of that amount must go to the states in equal amounts per state. Under Endowment policy 50 percent of those funds not reserved for equal distribution among the states, or up to 12.5 percent of the total, is allocated to regional groups. The other half is distributed among the states according to population size. In addition, limited funds over and above the 20 percent are made available to support costs of information services, arts management assistance, and other services provided at a national level to state arts agencies and regional groups. Support for the National Assembly of State Arts Agenices comes from these "over and above" funds.

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Staff training and information processing needs are addressed at the national level through the National Assembly of State Arts Agencies. Of particular importance is the development of a central data base of standard information on state and regional arts agency activities. This will facilitate evaluation of the impact of public and private matching funds on the arts, further the coordination of Endowment and state/regional programs, and enhance the ability of government arts agencies to report to elected officials and the public on the use of public funds.

In addition, State Programs plans to support a limited number of special projects which respond in particularly innovative or timely ways to the needs and opportunities discussed above. An example of such a project is the Dance/Inter-Arts/State Programs Presenting/Touring initiative, designed to make dance performances more accessible in the states and regions.

1. Basic State Grants

Funds in this category support the programs and administrative needs of state arts agencies through annual formula grants to the designated agencies in each of the 56 states and jurisdictions. In FY 87 we anticipate awarding 56 grants out of 56 applications aggregating $18,300,000 vs. 56 grants out of 56 applications aggregating $21,100,000 awarded in FY 86.

Example: For FY 84 the Alaska State Council on the Arts received a Basic State Grant of $372,600 which was used in combination with approximately $12 million in state, local, and private funds to support 207 projects in 12 arts disciplines. Basic State Grant dollars helped to fund concerts, performances, fellowships, exhibitions, festivals, classes, publications, residencies, touring, and the general operations of arts institutions in Alaska. A sampling of awards includes a grant of $1 million to support operations of the Alaska Repertory Theatre in Anchorage; a grant of $135,000 for support of the Fairbanks Symphony; $235,000 for support of the Visual Arts Center of Alaska in Anchorage; $226,586 for support of the Perseverence Theatre in Juneau; and $120,000 for the Institute of Alaska Native Art in Fairbanks.

2. Regional Arts Programming Grants

Grants in this category are awarded to regional groups of state arts agencies for support of arts programs planned and implemented on a multi-state basis. In FY 87 we anticipate awarding 7 grants out of 7 applications aggregating $2,600,000 vs. 7 grants out of 7 applications aggregating $3,050,000 awarded in FY 86.

Example: For FY 84, the New England Foundation for the Arts in Cambridge, MA received a Regional Arts Programming Grant of $308,700, which was used in combination with approximately $2.3 million in state, private, local, and other Federal funds to carry out multi-state arts programming in Connecticut, Maine, Massacusetts, New Hampshire, Rhode Island, and Vermont. The New England Foundation supported 822 projects which involved the presentation of arts residencies, concerts, performances, and exhibitions in 12 disciplines in communities throughout the region. A few of the more than 100 New England

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performing arts groups participating in Foundation programs were the Vermont Symphony Orchestra, the Boston Camerata, Opera New England, the Greenwood Consort, the Celestino Jimenez Orquestra, the Art of Black Dance and Music, the Hartford Ballet, the Mandala Folk Dance Ensemble, the Boston Shakespeare Company, and the National Theatre of the Deaf. Foundation-sponsored exhibitions and media presentations have included Boston's Elder Men and Women of Achievement - photographic portraits, Offset: A Survey of Artists' Books, North American Basket Treasures, and New Releases: Works by New England Independent Filmmakers. The Foundation also provides research and information services for arts organizations in New England. In 1984 762,100 individuals benefited from Foundation-sponsored projects involving 4,458 artists.

3. Special Projects

Funds in this category provide State Programs contribution to the Dance/Inter-Arts/State Programs initiative to encourage dance touring. In FY 87 we anticipate awarding 7 grants out of 16 applications aggregating $350,000 vs. 6 grants out of 6 applications aggregating $400,000 awarded in FY 86.

4. State Support Services

Grants awarded in this category are designed to assist state and local arts activities by providing support for organizations such as the National Assembly of State Arts Agencies. In FY 87 we anticipate awarding 2 grants out of 2 applications aggregating $250,000 vs. 2 grants out of 2 applications aggregating $300,000 awarded in FY 86.

Example: For FY 84 the National Assembly of State Arts Agencies received a grant of $270,400. These funds supported administrative costs, an annual meeting, and other services to state arts agencies. The Assembly informs state arts agencies on current issues and developments in the arts, provides forums for the review and discussion of arts policy issues, and provides programs to strengthen the planning and management capabilities of member agencies. The Assembly publishes a monthly newsletter with a printing of more than 1,000 which reaches some 750 state arts council members. Other activities include the maintenance and development of the National Standard for Arts Information Exchange. The Standard, developed under the auspices of the Assembly, consists of common terms, definitions, and reporting formats. It is expected to improve information management, increase accountability, and facilitate information exchange among public arts agencies. State Programs support to the National Assembly of State Arts Agencies is matched, primarily with member agency dues.

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NATIONAL ENDOWMENT FOR THE ARTS

ADVANCEMENT PROGRAM

APPLICATION/AWARD RELATIONSHIP & PROGRAM IMPACT: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

CATEGORY	FY 1985 APPL.	FY 1985 GRANTS	FY 1985 AMOUNT	FY 1986 APPL.	FY 1986 GRANTS	FY 1986 AMOUNT	FY 1987 APPL.	FY 1987 GRANTS	FY 1987 AMOUNT
ADVANCEMENT	109	37	2,244 a/	...b/	...b/	1,600 c/	...b/	...b/	1,000 d/
PROGRAM TOTAL	109	37	2,244	...	...	1,600	...	...	1,000

CATEGORY DISTRIBUTION BY FUND TYPE: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

CATEGORY	FY 1985 DEFINITE	FY 1985 INDEF	FY 1985 TOTAL	FY 1986 DEFINITE	FY 1986 INDEF	FY 1986 TOTAL	FY 1987 DEFINITE	FY 1987 INDEF	FY 1987 TOTAL
ADVANCEMENT	674	1,570 a/ 2,244		200	1,400 c/ 1,600		200	800 d/ 1,000	
PROGRAM TOTAL	674	1,570	2,244	200	1,400	1,600	200	800	1,000

a/ Excludes $1,461 of FY 84/85 Treasury funds; includes $1,520 of FY 85/86 Treasury funds carried into FY 86.
b/ Awards will be amendments to grants made in prior years, therefore no new applications or grants are shown.
c/ Excludes $1,320 of FY 85/86 Treasury funds, includes $1,395 of FY 86/87 Treasury funds carried into FY 87.
d/ Excludes $1,395 of FY 86/87 Treasury funds.

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ADVANCEMENT

Purpose

The Advancement Program serves as a complement to the Challenge Grant Program by assisting smaller arts organizations of the highest artistic quality in achieving improved new levels of financial and administrative stability.

Needs and Opportunities in the Field

There are important emerging organizations in every arts field that lack fund-raising experience and access to private dollars. They would benefit from comprehensive assistance provided by expert consultants.

Emerging organizations do not generally have the resources available to effect long-term improvements. They can benefit from development of basic management skills, stronger boards, better access to donors, and sufficient working capital. There is an opportunity to improve these areas through technical assistance and careful planning.

Program Response

Advancement grants focus on increasing an organization's general capacity for management and the development of revenue and other financial support. Advancement candidate organizations have greater difficulty than more established institutions in generating private funds. Therefore the program consists of two phases:

- A preparatory phase, in which expert consultants assist grantees in developing multi-year programs and financial plans and guide them in improving administration, fund raising, board development and public relations.

- A fund-raising phase, in which the Arts Endowment provides funds, to be matched at least 3 to 1, to implement the multi-year plans and broaden the contributed funding base of grantees.

The Endowment initiated a three-year plan in FY 83 which enabled all twelve Endowment discipline programs to participate in Advancement; four programs were included each year. The number of grantees in each arts discipline area was kept small to ensure delivery of the highest quality technical assistance during the preparatory phase of the grant. This is a unique feature of the Advancement Program, addressing the short- and long-range management needs of smaller organizations in all the arts fields.

Participation in the program was as follows:

FY 83 Group I (29 Grants)	FY 84 Group II (36 Grants)	FY 85 Group III (36 Grants)
Literature	Dance	Design Arts
Media Arts	Folk Arts	Expansion Arts
Opera-Musical Theater	Music	Inter-Arts
Visual Arts	Theater	Museums

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The announcement of the third group of Advancement grantees in the fall of 1985 concluded the agency's three-year program plan. More than one hundred organizations will have participated in the Advancement Program by the conclusion of the grants to organizations selected in FY 85. This represents 19 percent of the 532 organizations which applied for assistance.

The Endowment is currently evaluating the effectiveness of the Program in achieving its goals. The evaluation should be concluded in the spring of 1986. At the same time the Endowment is exploring various methods for the continued long-term enhancement of emerging arts organizations.

The FY 87 request provides for the final year of funding for the grantees in Dance, Folk Arts, Music and Theater; and the second year of funding for the grantees in Design Arts, Expansion Arts, Inter-Arts and Museums.

Example: Since their acceptance into the Advancement Program in FY 84, A Traveling Jewish Theatre has increased both its earned and its contributed income. Some of the improvements undertaken during the preparatory grant include: initiation of a direct-mail fund-raising solicitation which attracted more than 300 new donors and prompted donations in excess of $21,000; the addition of a full-time development director with secured funding for the first year of the position; recruitment of five new board members; and creation of a new marketing brochure.

A Traveling Jewish Theatre performs in San Francisco (its home), tours, teaches (both on the road and at home), and sponsors performances by other artists. Since its inception 6 years ago, it has presented more than 400 performances, in 38 cities in the United States, Canada, Europe and Israel. A total of 23,100 audience members attended performances of the 1983-84 season.

A Traveling Jewish Theatre is currently raising the required 3-to-1 match for its $75,000 Advancement grant awarded in FY 85.

Example: Another FY 84 Advancement participant, the Canton Symphony Orchestra, in Canton, OH, through increased marketing efforts during the preparatory grant reached more audiences by booking three additional performances in their 1985-86 season. These were The Young Artist Competition in Canton, a performance with the Canton Ballet, and a Young People's Concert in Hadsworth, OH. In addition, the Orchestra was able to change the position of Public Relations Coordinator from half-time to full-time.

In FY 85, the Canton Symphony Orchestra received its $75,000 Advancement award and is currently raising the required 3-to-1 match.

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NATIONAL ENDOWMENT FOR THE ARTS

CHALLENGE GRANT PROGRAM

APPLICATION/GRANT RELATIONSHIP & FUNDING IMPACT: FY 1985-87
($ in Thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

CATEGORY	FY 1985 APPL.	FY 1985 GRANTS	FY 1985 AMOUNT	FY 1986 APPL.	FY 1986 GRANTS	FY 1986 AMOUNT	FY 1987 APPL.	FY 1987 GRANTS	FY 1987 AMOUNT
CHALLENGE GRANTS	149	50	20,580 a/	151	49	20,457 b/	100	45	18,000 c/
PROGRAM TOTAL	149	50	20,580	151	49	20,457	100	45	18,000

CATEGORY DISTRIBUTION BY FUND TYPE: FY 1985-87
($ in Thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

CATEGORY	FY 1985 DEFINITE	FY 1985 INDEF	FY 1985 TOTAL	FY 1986 DEFINITE	FY 1986 INDEF	FY 1986 TOTAL	FY 1987 DEFINITE	FY 1987 INDEF	FY 1987 TOTAL
CHALLENGE GRANTS	0	20,580	20,580 a/	0	20,457	20,457 b/	0	18,000	18,000 c/
PROGRAM TOTAL	0	20,580	20,580	0	20,457	20,457	0	18,000	18,000

a/ Includes $20,631 of FY 84/85 Challenge funds; includes $20,473 of FY 85/86 Challenge funds carried into FY 86.
b/ Includes $20,473 of FY 85/86 Challenge funds, includes $20,380 of FY 86/87 Challenge funds carried into FY 87.
c/ Includes $20,380 of FY 86/87 Challenge funds.

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CHALLENGE

Purpose

Arts Endowment Challenge grants provide opportunities for the very best of our arts institutions to strengthen their long-range institutional capacity, to enhance artistic excellence and make it available to a broad audience by providing for or enlarging endowments and cash reserves, to improve physical plants, to eliminate debts, and to establish on a long-term basis new artistic ventures which further the institution's long-range artistic goals and/or advance the state of the art form it represents.

To this end, grantees are expected to launch major fund-raising campaigns to stimulate new and increased contributed income from non-Federal sources, and to engage in ongoing, long-range programming and financial planning. The principal criterion in awarding Challenge grants is the artistic excellence of the institution.

The Endowment views the Challenge Grant Program as an important complement to other Endowment programs which provide project or seasonal support to arts groups of the highest level of quality.

Needs and Opportunities in the Field

As stated in the Endowment's Five-Year Planning Document, arts institutions, unlike academic institutions, by and large lack substantial net worth. Whereas support for operating needs assists activity for a given year, capital support assists the institution to handle operations over the years -- to take artistic risks and absorb unforeseen losses.

The building of an adequate capital base and the expansion of the donor pool are ongoing tasks of arts institutions. Most arts institutions must annually raise and earn large amounts in order to maintain artistic quality and their responsibilities to the community. In major capital campaigns, private donors respond especially well to large matching grants from outside sources.

Program Response

Since FY 83, the Challenge Grant Program has concentrated on helping recipients build endowments, acquire working capital, reduce permanent deficits, and undertake long-term commitments to new artistic projects. The Program intends to assist the finest arts institutions, large and small, to develop a capital base which will make them less dependent on annual earned or contributed income. From 1977 through 1984, Endowment Challenge grants of $151 million have stimulated over $1 billion in new and increased contributions.

The Challenge Grant Program is beginning to explore alternative funding methods for the continued long-term enhancement of the arts.

Challenge grants must be matched by a minimum of 3 to 1 from new and increased private sources. In FY 87 we anticipate awarding 45 grants out of 180

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applications aggregating $18,000,000 vs. 49 grants out of 151 applications aggregating $20,457,000 awarded in FY 86.

Example: In FY 83, the Atlanta Arts Alliance in Atlanta, GA, received a $400,000 Challenge grant on behalf of the High Museum of Art to augment the Museum's endowment. A larger endowment was necessary to assist the Museum in supporting the increased operating costs associated with the move into a new facility in October 1984. The new building, designed by Richard Meier, enabled the Museum to put on public view a greater portion of its collection, the core of which consists of 19th- and 20th-century American works. Attendance for the Museum's program of exhibitions grew from 300,000 in 1983 to an average of almost 50,000 visitors a month for the first six months after the move, projecting a total of 600,000 for 1984-85.

As of October 1985 the High Museum of Art had received over $2.1 million towards the required Challenge match of $1.2 million. With 21 months left in the Museum's Challenge grant period, a 5-to-1 match has already been achieved.

Example: In FY 85, the Houston Grand Opera received a $1,000,000 Challenge grant to augment its endowment, upgrade data and word processing equipment and support artistic initiatives when the Opera moves into the new Wortham Theater Center. The artistic initiatives include an increase in the scope of productions in the grand opera series and the development of a series of chamber opera productions. In the grand opera series, special initiatives include the productions of Mozart and Wagner cycles and masterpieces of 20th-century literature and continuation of a Janacek cycle. The new music theater series will consist of intimate works emphasizing imaginative direction and design and will feature all American casts. A young artists recital series will also be inaugurated which will provide performing experience for young vocalists. Audiences will have more opportunities to enjoy the Houston Grand Opera's productions, as the planned first season (1987-88) in the Wortham Center will more than double the number of performances. The Challenge grant is part of an overall $10 million dollar campaign.

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NATIONAL ENDOWMENT FOR THE ARTS

OFFICE OF POLICY, PLANNING & RESEARCH

APPLICATION/GRANT RELATIONSHIP & FUNDING IMPACT: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

CATEGORY	FY 1985 APPL.	FY 1985 GRANTS	FY 1985 AMOUNT	FY 1986 APPL.	FY 1986 GRANTS	FY 1986 AMOUNT	FY 1987 APPL.	FY 1987 GRANTS	FY 1987 AMOUNT
ARTS MANAGEMENT FELLOWS	215	43	150	250	47	175	300	43	175
INTERNATIONAL	15	15	173	20	8	200	25	12	225
RESEARCH	6	6	593 a/	30	6	499	30	6	525
SPECIAL CONSTITUENCIES	6	6	51	3	3	50	4	4	50
SPECIAL PROJECTS	15	15	65 b/	3	3	50	4	4	25
PROGRAM TOTAL	257	85	1,040	350	69	974	363	69	1,000

CATEGORY DISTRIBUTION BY FUND TYPE: FY 1985-87
($ in thousands)

(FEDERALLY APPROPRIATED FUNDS ONLY)

CATEGORY	FY 1985 DEFINITE	FY 1985 INDEF	FY 1985 TOTAL	FY 1986 DEFINITE	FY 1986 INDEF	FY 1986 TOTAL	FY 1987 DEFINITE	FY 1987 INDEF	FY 1987 TOTAL
ARTS MANAGEMENT FELLOWS	150	0	150	175	0	175	175	0	175
INTERNATIONAL	173	0	173	200	0	200	225	0	225
RESEARCH	593 a/	0	593	500	0	499	525	0	525
SPECIAL CONSTITUENCIES	51	0	51	50	0	50	50	0	50
SPECIAL PROJECTS	65 b/	0	65	50	0	50	25	0	25
PROGRAM TOTAL	1,040	0	1,040	975	0	974	1,000	0	1,000

a/ Excludes 999 of no-year Administrative funds and 650 of no-year Program funds; includes 660 of FY 85 Program funds.
b/ Excludes 910 of no-year Program funds; includes 95 of unobligated FY 85 Administrative funds.

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POLICY, PLANNING AND RESEARCH

Purpose

The purpose of the budget for Policy, Planning and Research (PPR) is to support select activities which cut across the Program and Partnership areas.

We propose that PPR be shifted in FY 87 from the administrative account to Program funds. A principal function of PPR is to support activities external to the Endowment, consistent with uses specified under Section 5(c). The Arts Management Fellowship Program is a cross-disciplinary grant-making program, consistent with Section 5(c)(3). International activities are supported through grants, consistent with Sections 5(c)(2) and (3). Research is specifically authorized by Section 5(c)(6). The Office for Special Constitutencies supports projects to make the arts more widely available, consistent with 5(c)(2). The Special Projects category provides support for a variety of activities consistent with Section 5(c).

Needs and Opportunities in the Field

Arts Management Fellows. Skilled management of arts organizations is essential. The Endowment is in a unique position to contribute to the development of talented arts managers because, as the Federal arts agency, it responds to the needs of not-for-profit arts organizations and individual artists around the nation. Fellows at the Endowment can gain a valuable national overview of the arts.

International. International linkages in the arts result in a cross-fertilization of ideas; such linkages need to be expanded since American artists benefit from exposure to the art and artists of other countries, and this in turn benefits American audiences. American art and artists have long served as roving ambassadors for this country's art and culture. Recent legislation calling for a celebration of the 500th anniversary of the landing of Columbus will generate arts projects involving the governments of Italy, Spain, Portugal and Latin America.

The International Office furthers arts exchanges through fellowships awarded under the U.S./Japan and U.S./France Exchange Programs; an interagency agreement between the Arts Endowment and the USIA which provided $300,000 in FY 85 (NEA-$75,000; USIA-$225,000) to expand United States participation in international arts festivals and exhibitions abroad; it also provides opportunities for American audiences to experience the arts of other nations by providing seed money for interdisciplinary arts festivals sponsored jointly by the United States government and foreign governments, and by coordinating information and Endowment panel evaluation of arts projects abroad undertaken by other United States government agencies.

Research and Policy Analysis. Congress, in the 1985 reauthorization process, called for a report on the state of the arts, based on a practical system of data collection. The request covered data on artists, arts organizations, and audiences. The law also called for a study of needs and resources in arts education. In addition to Congressional demands, there are ongoing needs for analyses addressing specific policy, evaluation, or research issues, e.g., a review of support for the arts in other countries, evaluation of existing

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programs, and in-depth interdisciplinary studies. The Endowment's research budget supports this work. The need for this data is twofold: 1) to help improve the Endowment's policy development, so that Federal funds flow into areas where they can be most helpful; and 2) to assist arts organizations and artists in their efforts to produce work of excellence and reach broader audiences.

Special Constituencies. Handicapped citizens number 36 million according to HHS estimates. An estimated 4.5 million are institutionalized in hospitals, nursing homes, etc. People who are 65 and older form an increasingly large proportion of our population (over 10 percent in 1980, over 20 percent by 2030). This growth is stimulating increased attention to the requirements of older Americans as well as for handicapped people. There is a need for arts planners to take this into consideration in their programming.

Special Projects. While Endowment Programs and categories are designed to cover a broad range of disciplines and activities, occasionally needs arise which do not fall within defined guidelines of the agency. This category is designed to provide a very modest but flexible level of support for such needs.

Program Response and Category Descriptions

In FY 86, Policy, Planning and Research provided for continued participation in the Fellows program; continuation of the joint fellowship program of the Japan-United States Friendship Commission; assessment of the economy of not-for-profit arts organizations within the total U.S. economy; and the maintenance of efforts to promote access to the arts for older, disabled, and institutionalized people. The FY 87 budget will support the continuation of these efforts.

1. Arts Management Fellows

The Arts Endowment's Fellowship Program for Arts Managers brings arts administrators or potential arts administrators to the Arts Endowment to obtain a national perspective on the arts and on the art form they intend to manage. The Program familiarizes them with Endowment policies, procedures and operations through work in program offices, special lectures, and attendance at panel and National Council meetings. In FY 87 we anticipate awarding 43 fellowships out of 300 applications aggregating $175,000 vs. 47 fellowships out of 250 applications aggregating $175,000 awarded in FY 86.

Example: In FY 85, Robert Stein came to the Endowment from Connecticut where he is Managing Director of the Nutmeg Ballet Company in Torrington, and was formerly Public Relations Director at the Hartford Stage Company. While in Hartford, he also served as a commissioner on Hartford's Commission of Cultural Affairs, and as co-founder of a group of marketing directors associated with the League of Regional Theaters in southern New England. As a Fellow with the Test Program of Support for Local Arts Agencies, Mr. Stein was able to use his knowledge of city government and his background in public relations to help evaluate the progress of grantees. During his stay at the Endowment, Mr. Stein attended seminars led by arts experts and briefings from Endowment staff. He broadened his understanding of the field of dance and expanded his ideas on

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how his small company might better serve the New England region through touring and presenting.

2. International

The International Office has played both a leadership and seeding role in international activities through working in cooperation with other U.S. agencies, foreign governments and the private sector. The 1985 Memorandum of Understanding between the Arts Endowment and the USIA, to increase American participation in major international arts festivals and exhibitions, will enable American art and artists to be seen by more foreign audiences than heretofore. American audiences also benefit from this cross-fertilization which influences and enriches the creation of new work in this country. In FY 87 we anticipate awarding 12 grants out of 25 applications aggregating $225,000 vs. 8 grants out of 20 applications aggregating $200,000 awarded in FY 86.

Example: In FY 85, a grant of $4,000 to the Merce Cunningham Dance Company in New York City allowed this prominent modern dance company to perform in the International Festival of New Dance in Montreal, Canada. Their participation included lectures, video presentations and master classes led by the 28-member company. In addition, the company's performances were attended by thousands of dance enthusiasts and festival organizers from the United States and abroad. The company's dancers had the opportunity to meet with other renowned artists such as Pina Bausch, Director of the Tanztheater Wuppertal in Germany, and Jean-Pierre Perrault, a leading figure in dance in Quebec. Mr. Cunningham reports that there were serious discussions about possible future collaborations with these companies. He also noted that the company is now in an enhanced position to attract funders from the private sector for future festival activities.

3. Research

The Endowment's research efforts are carried out by means of a combination of staff and external assistance under grants, contracts, and cooperative agreements. In FY 87 we anticipate awarding 6 grants out of 30 applications aggregating $525,000 vs. 6 grants out of 30 applications aggregating $499,000 awarded in FY 86.

Example: In FY 85, the Publishing Center for Cultural Resources of New York City received a grant of $25,000 to help the publication of an instruction manual called: Surveying Your Arts Audience. The manual was developed based on the analysis of several hundred audience studies conducted by arts organizations to determine their strengths and weaknesses. Subsequently, a draft of the instruction manual was prepared and tested in the field by encouraging five arts organizations in Washington, Maine, New Jersey, Ohio and Mississippi to use it while conducting audience studies for themselves. Now the manual is being distributed widely to arts organizations as a means of providing technical assistance for the improvement of the quality of audience studies that they may undertake themselves.

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4. Special Constituencies

The Office for Special Constituencies provides advocacy, technical assistance, and funding for programs to ensure that the arts are made accessible to handicapped, older and institutionalized Americans. This office works closely with Endowment programs, grantees and other Federal agencies to ensure support for and attention to the needs of special constituencies. In FY 87 we anticipate awarding 4 grants out of 4 applications aggregating $50,000 vs. 3 grants out of 3 applications aggregating $50,000 awarded in FY 86.

Example: In FY 84, the Office for Special Constituencies awarded $19,803 to the American Institute of Architects Foundation in Washington, DC, to support the printing of Design for Aging, An Architect's Guide, which became available to architects across the country in January 1986. This publication will be a practical guide to designing for older people; it will help architects create environments which are sensitive to the needs of older people. In order to assure that this project has the maximum impact, the Special Constituencies Office developed an interagency agreement with three other Federal agencies (Administration on Aging of HHS, the Farmers Home Administration of USDA, and the Department of Housing and Urban Development) to improve awareness among the public sector networks of the design requirements for older persons and to disseminate the Guide and other relevant information through the various networks of Federal agencies.

5. Special Projects

This category is designed to support innovative and exemplary projects that will have a broad impact on the arts fields, but which are not eligible under other Endowment categories. Only a limited number of projects of national or regional significance are supported in this category. In FY 87 we anticipate awarding 4 grants out of 4 applications aggregating $25,000 vs. 5 grants out of 5 applications aggregating $50,000 awarded in FY 86.

Example: In FY 85, Business Volunteers for the Arts in San Francisco, CA, was awarded $10,000 to produce two publications designed to illustrate innovative partnerships for the arts: Creative Partnerships and San Francisco Bay Area: A Rich and Diverse Center for the Arts. These publications will be distributed to mayors, state and local arts agencies, and corporations to encourage broadened partnerships for the arts. In addition, the U.S. Travel and Tourism Administration of the Department of Commerce is distributing abroad the San Francisco publication as part of a strategy to develop tourism here through an emphasis on cultural resources.

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ADMINISTRATION

I. INTRODUCTION

The high quality of the National Endowment for the Arts' grant-making process and its responsiveness to the variety of arts fields it serves depend on an adequate administrative structure and the funds needed to support that structure. This request addresses these needs at a prudent level. The National Endowment for the Arts requests $14,900,000 in administrative funds for operation of the agency in FY 87. In FY 85 the Endowment's Intergovernmental Personnel Act (IPA) employees, Regional Representatives and the Office of Policy, Planning and Research were transferred to administrative funds; these activities were previously included in the program budget. The Endowment's FY 85 appropriation was not passed until after the start of the fiscal year so for the IPA's and Regional Representatives, FY 85 was a transition or phase-in year. The full cost of the IPA's and the Regional Representative Program will be borne by the administrative budget in FY 86 and FY 87; in FY 87, we have featured Policy, Planning and Research as Program funds.

The request of $14,900,000 represents a modest 2.0 percent increase vs. FY 85 and a 2.7 percent increase vs. FY 86. This slight increase vs. the FY 86 base is due to the fact that the FY 86 base appropriation was relatively low. This, in turn, is due primarily to the 0.6 percent cut on the freeze level budget featured in the Conference Report of the Interior and Related Agencies section of the Continuing Resolution. The resulting 0.6 percent cut vs. FY 85 did not fully make provision for the addition of IPA costs in FY 86 that had previously been funded from the program account ($263,000), nor did it provide for the full-year impact in FY 86 of the FY 85 pay increase ($93,000).

Last year, we made a firm commitment to implement an automated data processing (ADP) plan to improve productivity and expand the operating capabilities of the Endowment's computer system. Such was our commitment that it was necessary to shift resources (on a one-time basis) from other object classes, especially personnel compensation and panelist contracts, to fund planned hardware and software acquisitions. These changes result in our being able to support only 253 FTE in FY 86, a critically low level, vs. our authorized ceiling of 261 FTE. This restoration is critical, particularly in light of new responsibilities imposed by the 1985 reauthorizing legislation (i.e., generation of several reports, intensified grants oversight, and expanded outreach).

The FY 87 administrative budget we are now requesting will allow us to restore the FTE to the authorized FY 87 ceiling of 258 FTE. Additionally, we will be able to restore panel activities to a reasonable level, as the panel system is critical to our grant application review process. The budget for panel operations was cut 15 percent in FY 86 vs. FY 85. The FY 87 administrative request will support the ADP equipment rental and system we plan to acquire through our FY 86 reductions.

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In our FY 86 budget request, we proposed transferring the Office of Policy, Planning and Research (OPPR) back to the program budget, but since we are under a Continuing Resolution (P.L. 99-190) for FY 86, OPPR remains under the administrative budget as a separate line item. For FY 87 we are again featuring OPPR as part of the program budget. The OPPR request is discussed under the "Policy, Planning and Research" tab.

II. ANALYSIS OF FY 87 ADMINISTRATIVE BUDGET BY COST CATEGORIES

A. PERSONNEL COMPENSATION

For FY 87 the Endowment requests $9,223,800 for personnel compensation. This amount is slightly less than the FY 85 actual expenses but includes the full annualized cost of the FY 85 pay raise. The amount requested for personnel compensation in FY 87 will enable restoration of our FTE to the authorized level of 258 vs. the one-time reduction to 253 we proposed of necessity for FY 86. This reduction has resulted in the understaffing of a number of important functions. It has however, enabled us to make an investment in hardware and software to enhance the agency's automated data processing capabilities. It should be noted that the Endowment's FTE was over 300 in FY 81.

1. Full-Time Permanent

This category includes support for 248 Full-Time Permanent (FTP) staff for FY 87 at the FY 85 salary level. FY 87 support: $7,606,000.

2. Other Than Full-Time Permanent

This category includes support for Part-Time Permanent (PTP) staff, Full-Time Temporary (FTT) staff, compensation for National Council on the Arts, and the Endowment's Stay-In-School program. Compensation for PTP and FTT is at the FY 85 salary level. FY 87 support: $568,000.

3. Other Personnel Compensation

The Endowment's policy is to pay overtime only to employees below the GS-9 level. Overtime, Night Differential and Holiday pay are budgeted at $40,000 for FY 87. The Endowment has budgeted $55,000 for employee awards in FY 87. Total FY 87 support: $95,000

4. Personnel Benefits

The Endowment's costs for personnel benefits including Medicare and Social Security, at new ceilings, is 11.2 percent. Total benefits for FY 87: $914,800.

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5. Benefits to Former Employees

This category includes $20,000 for unemployment compensation and $20,000 for possible severence actions. Total for FY 87: $40,000.

($ In Thousands)

		FY 85 ACT	FY 86 EST	FY 87 REQ
11.1	Full-Time Permanent	7,570	7,539	7,606
11.3	Other than Full-Time Permanent	642	473	568
11.5	Other Personnel Compensation	89	70	95
11.9	Total Personnel Compensation	8,301	8,082	8,269
11.1	Personnel Benefits	911	902	914
13.1	Benefits to Former Employees	36	40	40
	Total, Compensation & Benefits	9,248	9,024	9,223

B. TRAVEL AND TRANSPORTATION OF PERSONS

This object class enables the Endowment to support all local and out-of-town staff travel, all travel of the National Council on the Arts, and travel costs of the President's Committee on the Arts and the Humanities.

Non-local staff travel enables the Arts Endowment Chairman, Deputies and Program staffs to attend professional meetings and conferences where they may explain agency policies and programs, and keep in touch with current trends, needs and opportunities in the field. Non-local staff travel enables the Endowment's Audit and Civil Rights offices to fulfill their statutory and regulatory responsibilities, and enables staff of the President's Committee on the Arts and the Humanities to attend necessary meetings. Council travel permits members of the National Council on the Arts to attend Council meetings and policy meetings. Local staff travel comprises approximately two percent of total travel expenditures.

In FY 87 staff travel will play an important part in assisting the development of new directions for the agency as they relate to the future of the Challenge Grant Program and the Locals Test Program. Specific efforts will be made to travel to rural areas (more costly to reach) and to visit "under-represented" groups which are of particular concern to Congress as expressed in the 1985 reauthorization.

The Endowment's FY 87 request for Staff Travel represents a modest increase of 9.8 percent over the FY 85 level inclusive of Invitational Travel. National Council on the Arts travel remains constant at the FY 86 level. We anticipate some reductions in Staff Travel during FY 86 due to the Gramm-Rudman-Hollings reductions (the cutbacks will especially affect the

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latter half of FY 86). It will be essential to increase outreach with the field in FY 87 after such a hiatus in FY 86. Total FY 87 support: $300,000

($ in thousands)

	FY 85 ACT	FY 86 EST	FY 87 REQ
Staff Travel	242	222	261
Council Travel	28	39	39
Total	270	261	300

C. TRANSPORTATION OF THINGS

Funds in this object class are used primarily for express delivery of time-sensitive materials. The Endowment requests $20,000 for these expenses in FY 87.

($ in thousands)

	FY 85 ACT	FY 86 EST	FY 87 REQ
Transportation of Things	19	15	20

D. RENT, COMMUNICATIONS AND UTILITIES

1. Rent

Funds in this object class, formerly Standard Level User's Charges (SLUC), enable the Endowment to rent office, conference and storage space. In FY 87 rent will account for about 10 percent of the Endowment's total operating administrative budget, vs. 13 percent in FY 85 and FY 86. GSA rent rates for office space in the Nancy Hanks Center and storage space in the Shoreham Building basement total $1,465,200 in FY 87. The reduction in office space rental payments in FY 87 will more than be offset by restoration of our personnel compensation base and equipment rental payment for the enhanced ADP system.

2. COMMUNICATIONS, UTILITIES AND OTHER RENT

This object class provides funds for leasing ADP equipment, Treasury computer access, local and long-distance telephone service and postage fees.

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a. Equipment Rental

The Endowment's information/data processing requirements are primarily being satisfied by the Wang ADP system. As planned, we have been able to transfer the workload from our out-moded Four-Phase system to the Wang computer. We have returned several major components of the old system to the vendor during FY 85 and will continue the phaseout during FY 86. Although we purchased the mainframe of the Wang computer, it is our practice to lease peripheral devices and terminals under the Federal Lease to Owner Purchase Plan (FLTOP).

In FY 84, the Endowment compiled a Five-Year ADP Plan which detailed the upgrades required to bring our ADP system up to its full potential by FY 89. The plan addressed both hardware acquisition and software needs. The majority of the equipment proposed (about 70 percent) would enable us to acquire additional work stations and printers; the remaining amount would enable the Endowment to acquire equipment to enhance and increase the capacity of central processing and to acquire several microcomputers. ADP equipment accounts for about 83 percent of the equipment rental costs in FY 87.

b. Telephone

We have realized significant savings in our telephone service in FY 85 through call directing capabilities of the Rolm telephone switch acquired through an FLTOP agreement. We have also achieved savings in service reconfiguration since it can be programmed into the system thereby reducing the amount of hardware changes required. We have projected telephone costs to remain fairly constant in FY 86, relative to FY 85, with only a slight increase in FY 87.

c. Postage

The Endowment's postage rates have remained fairly constant for several years. The rate is based upon a survey conducted several years ago, and we expect significant increases once a new survey is conducted. We have not felt the effect of postage rate increases but, based upon anticipated volume for FY 87, we project a rate of $150,000.

($ in thousands)

	FY 85 ACT	FY 86 EST	FY 87 REQ
Rent	1,934	1,935	1,465
Equipment Rental	213	300	441
Telephone	278	290	302
Postage	120	120	150
Total	2,545	2,645	2,358

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E. PRINTING AND REPRODUCTION

Funds in this object class enable the Endowment to print application guidelines, program fliers, the Endowment's Annual Report, Arts Review and other miscellaneous items. Guideline printing is handled through GPO and accounts for the largest single item in our printing budget. We have experienced significant cost increases in guideline printing over the past several years. For FY 86 GPO projected an increase of 5 percent over the FY 85 rate; for FY 87 GPO projects a 7 percent increase over the FY 86 rate. We have been able to keep printing costs to a minimum by making use of an on-site contractor for reprographic services. For FY 87 we are requesting $273,000 for printing.

($ in thousands)

	FY 85 ACT	FY 86 EST	FY 87 REQ
Printing	215	248	273

F. OTHER SERVICES

1. Training

The Endowment's training budget has been at the same level for several years. With a smaller base of FTE, it becomes even more critical to enhance efficiency through staff development. Also, in FY 87 we project the need for increased funds for additional ADP training. The Endowment therefore requests $20,000 for training in FY 87.

2. Contractual Services

Funds in this object class are used for varied support services such as: ADP and telephone equipment maintenance; Old Post Office guard services (contracted through GSA); payroll services (contracted through GSA); office equipment repairs; health services (contracted through U.S. Department of Justice); cognizant audit agency services (contracted through DHHS); all general work orders (processed through GSA); and other miscellaneous services. In FY 87 we are requesting $340,000 for these services. This is consistent with the FY 85 level.

3. Panel Contracts

The Endowment's panel system is one of the most important activities for which support is requested. In order to achieve the broadest artistic and geographic representation and highest qualified experts, the Endowment attempts to reach across the country to bring in panelists from regions previously underrepresented. The thoughtful deliberations of artistic experts from diverse regions and varied perspectives serve as the foundation for assuring that standards of excellence are attained and upheld.

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During the 1985 reauthorization process, Congress reiterated its view that standards of excellence are essential; Congress also affirmed a need for panels with "broadly diverse characteristics in terms of esthetic or humanistic perspective, and geographic factors, and who broadly represent cultural diversity." These requirements run counter to recent cost-saving measures to reduce panel size. (In FY 86, panelist days -- the number of panelists multiplied by the number of days in meetings -- will decline approximately 9 percent vs. FY 85). Furthermore, we anticipate a 4 percent increase in applications in FY 87 vs. FY 85. Finally, GSA air fares are increasing in FY 87.

The cost of panelist activity has correspondingly increased. Panelist compensation has remained flat and is well below prevailing consultant fees. Our panelists work long days, often in excess of 12 hours, and many for five or six consecutive days. This valiant effort is reflective of their dedication to the arts. In FY 87 therefore we are requesting $610,000 for panelist contracts.

4. Consultant Contracts

The Endowment uses consultant contracts to bring at least one representative of each panel (generally the chairman) to meetings of the National Council on the Arts when program reviews occur. The panel Chairmen address the National Council members during program reviews to share the field's point of view. On other occasions, National Council members may request the presence of panel chairman or other experts for specific discussions. In FY 87 we are requesting $20,000, which is consistent with the FY 85 level.

5. Administrative Contracts, Long-Term

The Endowment utilizes administrative contracts to support activities which otherwise would be done by staff at greater cost. For several years we have contracted for reprographic services, which has resulted in savings to the government. The Endowment also contracts for the consultants and support staff for the President's Committee on the Arts and the Humanities. During FY 85 we awarded a contract for development of a Grants Management System for our Wang computer system. In FY 86 we will begin to contract for development of an accounting system. Under recently issued OMB guidelines we are working towards development of an integrated financial management system. Our request for administrative contracts for FY 87 is $455,000 which is consistent with the FY 85 and FY 86 levels.

Prior to FY 85 our Intergovernmental Personnel Act (IPA) contracts were under the program budget. We began to transfer these contracts to our administrative budget in FY 85. In FY 87 we are requesting $500,000 for IPA contracts.

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Regional Representatives function as conduits between the Endowment and the nationwide community of artists and arts organizations, as well as state and local arts agencies, patrons, and corporations. Regional Representatives have provided a consistent personal presence in the field and have responded to a variety of requests for information, referrals and technical assistance. In recent years, the Regional Representatives have concentrated on the analysis of problems and trends in the arts, particularly with respect to private sector initiatives. Prior to FY 85 the Regional Representatives activities were under the program budget. We have cut this program from 12 in 1981 to 6 in 1987. We began to transfer these contracts to the administrative budget in FY 85. In FY 87 we are requesting $630,000 for the Regional Representatives activities.

($ in thousands)

	FY 85 ACT	FY 86 EST	FY 87 REQ
Training	11	10	20
Contractual Services	336	286	340
Panel Contracts	589	519	610
Consultant Contracts	21	6	20
Administrative Contracts			
Contracts	443	448	455
IPA's	162 a/	363	500
Regional Representatives	589	600	630
Total	2,151	2,232	2,575

a/ FY 85 was a transition year from Program funds; the full cost of the IPA's was $406,000.

G. SUPPLIES AND MATERIALS

This object class provides funds for the purchase of: Books (costing less than $100); subscriptions of magazines, journals and newspapers; pamphlets and documents; copies and tapes; general office supplies; general ADP supplies such as computer tapes and discs; and sundry items. For FY 87 the Endowment requests $120,000 for supplies and materials, which is consistent with FY 85 levels.

($ in thousands)

	FY 85 ACT	FY 86 EST	FY 87 REQ
Supplies and Materials	114	90	120

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H. EQUIPMENT

The Endowment has refrained from purchasing new equipment for several years in order to offset expenses in other object classes. At this point, we must replace obsolete equipment which in some cases would cost more to repair than replace. For FY 87 we are requesting $30,000 for equipment.

($ in thousands)

	FY 85 ACT	FY 86 EST	FY 87 REQ
Equipment	9	0	30

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PRESIDENT'S COMMITTEE ON THE ARTS AND THE HUMANITIES

The President's Committee on the Arts and the Humanities (PCAH) was established by a Presidential Executive Order dated June 1982. The costs of the PCAH are reflected in the various object classes of the Arts Endowment's administrative budget. The PCAH's logistical and administrative support activities (e.g., personnel, contractual services, reprographic services, etc.) are provided by the Arts Endowment. Under an agreement with the National Endowment for the Humanities, they reimburse us for one-half of the PCAH expenses.

PCAH expenditures decreased slightly in FY 85 versus the planned level due to the departure of a contracted consultant. To fill that void, an Arts Endowment staff member and a Humanities Endowment staff member were assigned to PCAH on a part-time basis. For FY 86 and FY 87, PCAH plans to continue using these staff members on a part-time basis and to use outside consulting services on a part-time basis. The amount requested by NEA for PCAH in FY 87 is $114,000; the National Endowment for the Humanities will provide a like amount.

	FY 85 ACT	FY 86 EST	FY 87 REQ
1100 Personnel b/	$72,056	$75,775	$75,775
1200 Personnel Benefits b/	7,680	8,092	8,092
2100 Travel	11,531	15,297	17,600
2200/			
2300 Transportation/Postage	2,200	2,000	2,000
2310 SLUC	18,000	18,000	18,000
2321 Telephone	6,000	6,000	6,000
2400 Printing	2,628	500	817
2500 Contractual Services c/	96,114	98,296	98,316
2650 Supplies	1,819	2,040	2,000
3100 Equipment	0	0	0
Total d/	$218,028	$226,000	$228,000

b/ Includes compensation for PTP NEA staff member.
c/ Includes compensation for PTP NEH staff member.
d/ Includes transfers from National Endowment for the Humanities of $109,000 in FY 85; $113,000 in FY 86; and $114,000 in FY 87.

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NATIONAL ENDOWMENT FOR THE ARTS
ADMINISTRATIVE BUDGET: DETAIL OF OBJECT CLASSIFICATION
($ in thousands)

OBJECT CLASS	FY 85 ACT	FY 86 EST	FY 87 REQ
11.1 Full-Time Personnel	7,570	7,539	7,666
11.3 Other than Full-Time Personnel	642	473	568
11.5 Other Personnel Compensation	89	70	98
11.9 Total Personnel Compensation	8,301	8,082	8,269
12.1 Personnel Benefits - Civilian	911	902	914
13.0 Benefits to Former Personnel	36	40	41
Subtotal Pers Comp and Benefits	9,248	9,024	9,223
21.0 Travel & Trans. of Persons	270	261	300
22.0 Transportation of Things	19	15	20
23.1 Rent (Office & Storage)	1,934	1,935	1,466
23.2 Communications, Utilities and Other Rent	611	710	893
Subtotal Rent, Comm. & Util.	2,545	2,645	2,359
24.0 Printing and Reproduction	215	248	273
25.0 Other Services	2,739 a/	2,790 b/	2,575
26.0 Supplies and Materials	114	90	120
31.0 Equipment	9	0	30
41.0 OPPR Grants (Admin.)	387	415	n/a c/
TOTAL	15,546 d/	15,480 e/	14,980 f/

Footnotes:

a/ For FY 85 includes $588 of OPPR Contracts & Cooperative Agreements.
b/ For FY 86 includes $229 of OPPR Contracts & Cooperative Agreements.
c/ In our FY 87 Request, OPPR is returned to the Program Budget.
d/ Includes $2k of unobligated funds at end of year, $189 from NEA for one-half of PCAH expenses and $30 of no-year funds.
e/ Includes reimbursement of $113 from NEA for one-half of PCAH expenses.
f/ Includes reimbursement of $114 from NEA for one-half of PCAH expenses.

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NATIONAL ENDOWMENT FOR THE ARTS
GRANTS AWARDED AS CHAIRMAN'S ACTIONS
FY 1985

Program	Number	Amount
Dance	2	$20,000
Design Arts	1	17,500
Folk Arts	1	5,000
Literature	1	500
Media Arts	4	44,700
Museums	2	27,500
Music	1	10,000
Opera-Musical Theater	2	8,025
Theater	3	22,000
Visual Arts	1	5,000
Artists in Education	3	32,500
State Programs	2	23,500
Policy, Planning and Research *	46	185,652
Total	72	$401,877

NOTE: In FY 1984 there were 82 Chairman's Actions totaling $520,314.

* Includes 44 arts management fellows totaling $158,152.

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NATIONAL ENDOWMENT FOR THE ARTS
FY 85 CHAIRMAN'S ACTIONS

DANCE PROGRAM	
Special Projects	
Washington Ballet	$10,000
Bennington College Corporation	10,000
TOTAL - DANCE PROGRAM (2)	$20,000
DESIGN ARTS PROGRAM	
Design Demonstration Grants	
Coalition for the Homeless	$17,500
TOTAL - DESIGN ARTS PROGRAM (1)	$17,500
FOLK ARTS PROGRAM	
Folk Arts Organizations	
Kentucky Center for the Arts	$ 5,000
TOTAL - FOLK ARTS PROGRAM (1)	$ 5,000
LITERATURE PROGRAM	
Literary Publishing	
Graywolf Press	$ 500
TOTAL - LITERATURE PROGRAM (1)	$ 500
MEDIA ARTS PROGRAM	
Programming in the Arts	
City of Billings	$15,200
National Services	
San Francisco Int'l Video Festival	$17,500

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MEDIA ARTS PROGRAM (cont'd)

Special Projects

Huber, Richard	$ 2,000
People to People Comm for the Handicapped	10,000

TOTAL - MEDIA ARTS PROGRAM (4) $44,700

MUSEUM PROGRAM

Special Exhibitions

Chicago Sculpture International	$17,500
Institute for Art and Urban Resources, Inc	10,000

TOTAL - MUSEUM PROGRAM (2) $27,500

MUSIC PROGRAM

Music Professional Training

The Pierre Monteux Memorial Foundation	$10,000

TOTAL - MUSIC PROGRAM (1) $10,000

OPERA-MUSICAL THEATER PROGRAM

Services to the Art*

Minnesota Opera Guild	$ 6,400

Services to the Art

Humphrey, Steven	$ 1,625

TOTAL - OPERA-MUSICAL THEATER PROGRAM (2) $ 8,025

THEATER PROGRAM

Professional Theater Companies

Old Globe Theater	$10,000
Roadside Attractions, Inc.	10,000

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THEATER PROGRAM (cont'd)

Services to the Field

Bertin, Michael	$ 2,000
TOTAL - THEATER PROGRAM (3)	$22,000

VISUAL ARTS PROGRAM

Special Projects

Shields, Kathleen	$ 5,000
TOTAL - VISUAL ARTS PROGRAM (1)	$ 5,000

ARTISTS IN EDUCATION PROGRAM

Special Projects

Six Schools, Inc.	$ 5,000
National Dance Institute	17,500
Cncl. of Chief State School Officers	10,000
TOTAL - ARTISTS IN EDUCATION PROGRAM (3)	$32,500

STATE PROGRAMS

Basic State Grants

Idaho Commission on the Arts	$ 6,000

State Support Services

Texas Commission on the Arts	$17,500
TOTAL - STATE PROGRAMS (2)	$23,500

POLICY, PLANNING AND RESEARCH

Arts Management Fellows

Morning, Joseph	$ 3,300
Anderegg, Peter	4,200
Brittner, Lynn	3,824
Davis, Ruth	3,450
Hansen, Lena	4,200
Johnson, David	3,720
Kempnich, Barbara	$ 3,450

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Arts Management Fellows (cont'd)

McCormick, Cathleen	3,645
Plevin, Arlene	4,085
Rieti, Barbara	3,839
Segerlind, Fern	3,475
Stein, Robert	3,575
Talalla, Ida	3,450
Wry, Brann	3,468
Alexander, Leslie	4,030
Boughter, Carole	3,462
Carpenter, Elizabeth	4,427
Egleston, Elizabeth	3,700
Fassler, Cindy	3,420
Garza, Michele	4,214
Keast, Colleen	3,750
McCully, James Jr.	3,950
Robinson, Anne	3,550
Rotondi, Rosemary	3,530
Serkess, Michael	3,500
Simpson, Lorna	3,695
South, Lindsay	3,450
Timmons, Lynn	3,900
Tuttle, Marjorie	3,400
Clements, Virginia	3,602
Miller, Judith	3,300
Light, Judith	3,300
Johnson, Gail	3,400
DeRose, Mary Frances	4,000
Coates, Allega	3,300
Chen, Vivien	3,380
Robishaw, Lori	3,530
Marquis, Bruce	3,350
Magoon, Peter	3,800
Stablein, Marilyn	4,000
Schmidt, Bernard	3,500
Wine, Katherine	4,156
Woo, Kathryn	3,500
Drummond, Robin	275

International	
Japan/US Friendship Commission	$17,500
Special Projects	
Business Volunteers for the Arts	$10,000
TOTAL - POLICY, PLANNING AND RESEARCH (46)	$185,652
TOTAL FY 85 CHAIRMAN'S ACTIONS (72)	$401,877

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NATIONAL ENDOWMENT FOR THE ARTS
APPLICATION/GRANT RELATIONSHIP AND
ACTUAL OBLIGATIONS BY FUND TYPE
FY 1985-87
($ in thousands)

	FY 1985					FY 1986					FY 1987				
	APPL.	GRANTS	OBLIGATIONS	LOANS	AMOUNT	APPL.	GRANTS	OBLIGATIONS	LOANS	AMOUNT	APPL.	GRANTS	OBLIGATIONS	LOANS	AMOUNT
Dance	1,151	344	8,883	200	9,083	1,139	347	8,700	200	9,000	1,139	342	7,200	300	7,500
Design Arts	960	180	4,371	0	4,371	935	133	4,200	0	4,200	935	134	3,000	0	3,000
Expansion Arts	522	497	7,089 a/	20 b/	7,109	674	579	6,783	52 b/	6,835	512	534	5,450	50	5,500
Folk Arts	663	288	3,138	0	3,138	475	195	3,100	0	3,100	429	183	3,000	0	3,000
Inter-Arts	439	242	4,346	0	4,346	344	248	4,110	0	4,110	439	345	3,600	0	3,600
Literature	2,142	298	5,425	0	5,425	2,289	267	4,900	0	4,900	2,325	290	4,600	0	4,600
Media Arts	940	239	8,962	950 g/	9,912	986	237	12,215	650 a/	12,865	912	233	7,000	950 a/	10,000
Museums	1,359	645	11,386 b/	700	11,086	1,161	581	11,300	950 a/	12,150	1,169	597	9,150	1,750 a/	10,250
Music	2,648	859	12,197 c/	3,115	15,312	2,272	838	12,200	3,000 a/	15,200	2,200	867	9,600	3,300 a/	12,900
Opera-Musical Theater	339	173	3,903	2,000	5,953	336	181	4,100	1,900 g/	6,000	307	179	3,100	1,900 g/	5,000
Theater	938	1149	10,641	0	10,641	891	364	10,700	0	10,700	838	367	9,200	0	9,200
Visual Arts	6,109	1364	6,391	0	6,391	6,133	980	6,200	0	6,200	6,300	488	5,300	0	5,300
(Subtotal)	17,329	6,128	86,972	7,065	92,987	17,388	5,137	88,498	6,702	93,200	16,668	5,884	73,300	7,350	80,650
Artists in Education	217	113	5,437	0	5,437	200	110	5,350	0	5,350	236	111	4,800	0	4,800
Education	6	6	100	0	100	1	1	100	0	100	...	...	...	...	...c/
Locals Tool	38	11	2,256	0	2,256	23	10	2,200	0	2,200	34	12	2,300	0	2,300
State Programs	72	71	26,372	0	26,372	71	71	24,650	100 g/	24,750	81	72	21,500	100 c/	21,600
(Subtotal)	334	201	32,164	0	32,164	318	176	32,300	100	32,300	331	193	28,300	100	28,600
Advancement	109	17	674	1,710 b/	2,384	...d/	...d/	300	1,325 c/	1,725	...d/	...d/	300	1,400 a/	1,600
Challenge	149	50	0	20,730 b/	20,730	191	69	0	20,630 a/	20,630	188	65	0	20,350 a/	20,350
(Subtotal)	258	67	674	22,440	23,115	191	69	700	22,155	22,355	188	65	300	21,750	21,950
Policy, Planning & Research	257	63	1,196 a/	0	1,196	388	89	974	0	974	363	69	1,000 b/	0	1,000
Administration	...	...	14,715 a/	0	14,715	...	...	14,627 b/	0	14,627	...	...	15,015 a/	0	15,044
Total 6 applications & Grants	18,178	6,881				18,489	6,451				18,022	6,135			
Total - Grants and Administration			136,739					134,339					118,015		
				29,504					28,957					29,488	
Total - Matching Grants															
Grand Total					164,185					163,307					147,422

a/ FY 86 does not reflect the 4.3 percent reduction pursuant to the Balanced Budget and Emergency Deficit Control Act of 1985.
Footnotes are on page 141.

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FOOTNOTES TO CHART ON PAGE 150 ($ in thousands)

a/ Includes $170 of carryover Program funds.
b/ Includes $2 of carryover Program funds.
c/ Includes $1 of gift funds.
d/ Includes $99 of carryover Administrative funds, $60 of carryover Program funds and $40 of FY 85 Program funding includes $5 of unobligated FY 84 Administrative funds.
e/ Includes $31 of unobligated FY 85 Administrative funding includes $107 from HEW for 35 percent of PEER expenses, $5 from Dept. of Energy reimbursement, and $30 of carryover funds.
f/ Includes $45 of FY 85/86 Treasury funds carried into FY 86.
g/ Includes $200 of FY 85/86 Treasury funds carried into FY 86.
h/ Includes $1,661 of FY 84/85 Treasury funding excludes $1,530 of FY 85/86 Treasury funds carried into FY 86.
i/ Includes $30,631 of FY 84/85 Challenge funding excludes $20,473 of FY 85/86 Challenge carried into FY 86.
j/ Awards will be commitments to grants made in prior years, therefore no new applications or grants are shown.
k/ Includes $113 from HEW for 35 percent of PEER expenses.
l/ Includes $25 of FY 85/86 Treasury funds.
m/ Includes $200 of FY 85/86 Treasury funding excludes $400 FY 86/87 Treasury funds carried into FY 87.
n/ Excludes $160 FY 86/87 Treasury funds carried into FY 87.
o/ Excludes $100 FY 86/87 Treasury funds carried into FY 87.
p/ Excludes $200 FY 86/87 Treasury funds carried into FY 87.
q/ Excludes $100 FY 86/87 Treasury funds carried into FY 87.
r/ Excludes $1,330 of FY 85/86 Treasury funding excludes $1,295 of FY 86/87 Treasury funds carried into FY 87.
s/ Excludes $20,672 of FY 85/86 Challenge funding excludes $20,300 of FY 86/87 Challenge funds carried into FY 87.
t/ Included in Program funds.
u/ Includes $114 from HEW for 35 percent of PEER expenses.
v/ Includes $400 of FY 86/87 Treasury funds.
w/ Includes $100 of FY 86/87 Treasury funds.
x/ Includes $100 of FY 86/87 Treasury funds.
y/ Includes $100 of FY 86/87 Treasury funds.
z/ Includes $100 of FY 86/87 Treasury funds.
aa/ Includes $1,295 of FY 86/87 Treasury funds.
bb/ Includes $20,300 of FY 86/87 Challenge funds.
cc/ Included in $22.8m/a in Education.

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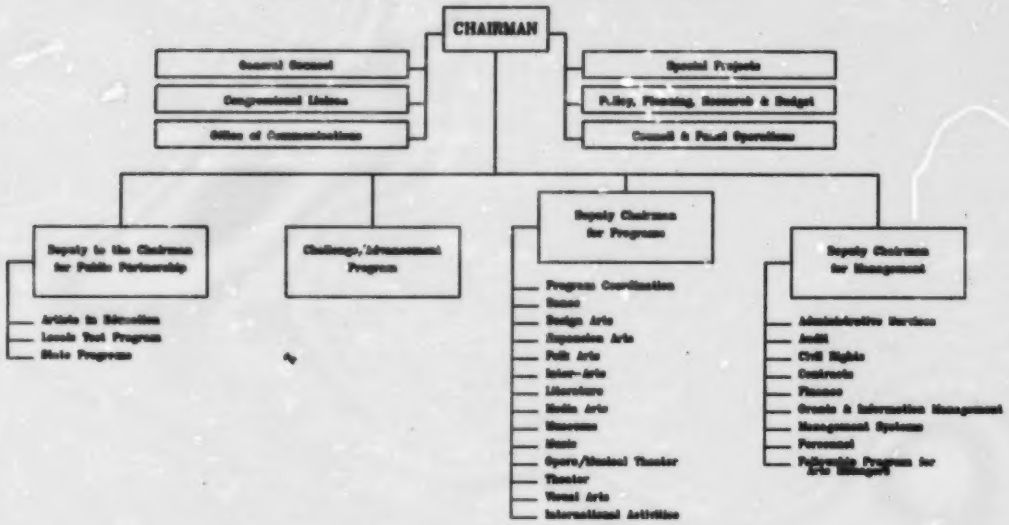
National Endowment for the Arts Organization Chart



February 1986

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NATIONAL ENDOWMENT FOR THE ARTS
DETAIL OF PERMANENT POSITIONS

59-0100-0-1-503	1985 Actual	1986 Estimate	1987 Estimate
Executive Level III	1	1	1
Subtotal	1	1	1
ES-6	0	0	0
ES-5	1	1	1
ES-4	0	0	0
ES-3	0	0	0
ES-2	2	2	2
ES-1	2	2	2
Subtotal	5	5	5
GS-18	0	0	0
GS-17	0	0	0
GS-16	0	0	0
GS-15	28	27	27
GS-14	19	17	17
GS-13	17	17	17
GS-12	29	30	30
GS-11	30	30	30
GS-10	0	0	0
GS-09	37	37	37
GS-08	6	6	6
GS-07	31	30	30
GS-06	11	11	11
GS-05	28	27	27
GS-04	13	14	14
GS-03	1	0	0
GS-02	0	0	0
GS-01	0	0	0
Subtotal	250	246	246
WG-4	1	1	1
Subtotal	1	1	1
Total Permanent Positions	257	253	253
Unfilled Positions, end of year	12	5	5
Total Permanent Employment, end of year	245	248	248

Note: Excludes part-time/temporary positions.

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NATIONAL ENDOWMENT FOR THE ARTS
Authorized Full Time Employment
Personnel Summary

	FY 1985 ACTUAL	FY 1986 ESTIMATE	FY 1987 ESTIMATE
Chairman's Office	7.5	7.5	7.5
Council and Panel Operations a/	5.2	6.0	6.0
Policy, Planning, Research & Budget b/	17.0	18.0	18.0
General Counsel	3.0	4.0	4.0
Congressional Liaison	4.0	4.0	4.0
Communications c/	10.0	6.0	5.0
Challenge and Advancement d/	6.0	6.0	6.0
Subtotal	52.7	51.5	50.5
Deputy Chairman for Programs	10.0	9.0	9.0
Dance	7.0	7.0	7.0
Design Arts	10.0	10.0	10.0
Expansion Arts	8.0	8.0	8.0
Folk Arts	6.0	6.0	6.0
Inter-Arts	6.0	6.0	6.0
Literature	6.0	6.0	6.0
Media Arts	9.0	10.0	10.0
Museums	9.0	8.0	8.0
Music	13.0	12.0	12.0
Opera/Music Theater	3.0	3.0	4.0
Theater	5.0	5.0	5.0
Visual Arts	10.5	11.0	11.0
Subtotal	102.5	101.0	102.0
Deputy to the Chairman for Public Partnership	3.0	3.0	3.0
Education	0.5	0.0	0.0
State Programs	4.0	4.0	4.0
Local Programs	3.0	4.0	4.0
AIE/Arts in Education	5.0	5.0	5.0
Subtotal	15.5	16.0	16.0
Deputy to the Chairman for Private Partnership e/	0.5	0.0	0.0
Private Sector	0.5	0.0	0.0
Subtotal	1.0	0.0	0.0

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Director of Administration	4.0	4.0	4.0
Civil Rights	2.0	3.0	3.0
Personnel //	12.0	8.0	12.0
Contracts and Procurement	4.0	4.0	4.0
Audit	7.0	7.0	7.0
Administrative Services	14.0	13.0	13.0
Finance	10.0	10.0	10.0
Grants and Information Management	33.0	31.0	32.0
Management Systems	3.0	3.0	3.0
Subtotal	89.0	83.0	88.0
President's Committee on the Arts and the Humanities	1.5	1.5	1.5
TOTAL	242.2	253.0	258.0

Footnotes:

a/ Includes the National Council on the Arts.
b/ Includes Special Constituencies.
c/ Includes Special Events and Special Projects.
d/ During FY 1985 this Program was transferred to the Chairman's Office from the Office of the Deputy to the Chairman for Private Partnership.
e/ During FY 1985 the functions of this office were decentralized and assumed by various offices in conjunction with the President's Committee on the Arts and the Humanities.
// Includes Temporary Clericals.

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NATIONAL ENDOWMENT FOR THE ARTS
ADMINISTRATIVE EXPENSES BY OFFICE
FY 85 - 87
($ in thousands)

	PERSONNEL EXPENSES ONLY			TOTAL ADMINISTRATIVE EXPENSES		
	FY 1985 ACTUAL	FY 1986 ESTIMATE	FY 1987 ESTIMATE	FY 1985 ACTUAL	FY 1986 ESTIMATE	FY 1987 ESTIMATE
Chairman's Office a/	$336	$336	$336	$960	$990	$1,021
Council and Panel Operations b/	195	195	195	263	272	300
Policy, Planning, Research & Budget c/	706	686	706	1,716	1,685	725 d/
General Counsel	155	155	155	165	160	165
Congressional	131	131	131	132	131	131
Communications e/	412	391	412	526	492	503
Challenge and Advancement f/	203	203	203	249	257	256
Subtotal	2,138	2,097	2,138	4,019	3,985	3,103
Deputy Chairman for Programs	470	466	474	488	484	499
Dance	200	198	202	262	263	334
Design Arts	408	406	410	487	565	571
Expansion Arts	277	275	279	323	319	328
Folk Arts	219	217	221	262	263	266
Inter-Arts	161	159	163	257	260	280
Literature	169	167	171	254	271	285
Media Arts	290	288	292	334	333	341
Museums	303	301	305	347	341	388
Music	408	406	410	530	536	591
Opera/Music Theater	138	136	140	197	216	220
Theater	144	142	146	223	259	266
Visual Arts	343	341	345	422	412	419
Subtotal	3,530	3,502	3,558	4,386	4,520	4,797
Deputy to the Chairman for Public Partnership	129	129	129	140	138	139
Education	30	0	0	30	0	0
State Programs	109	109	109	141	127	128
Local Programs	79	79	79	141	93	103
AIE/Arts in Education	206	206	206	235	231	242
Subtotal	553	523	523	687	589	612
Deputy to the Chairman for Private Partnership g/	34	0	0	39	0	0
Private Sector	26	0	0	28	0	0
Subtotal	60	0	0	67	0	0

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Director of Administration	366	365	396	216	213	349
Civil Rights	94	92	94	95	97	97
Personnel	434	385	460	438	438	530
Contracts and Procurement	103	101	105	103	101	105
Audit	337	335	339	377	361	360
Administrative Services	413	407	411	3,333	3,287	2,943
Finance	304	302	306	307	305	309
Grants and Information Management	851	849	853	1,244	1,346	1,436
Management Systems	125	123	127	125	123	127
Subtotal	2,807	2,817	2,921	6,278	6,271	6,274
President's Committee on the Arts and the Humanities b/	86	84	84	109	113	114
TOTAL	99,248	99,023	99,224	915,546	915,488	914,900

Footnotes:

a/ Includes the Regional Representatives Program.
b/ Includes the National Council on the Arts.
c/ Includes Special Constituencies.
d/ Includes 911 for OPPE staff travel and 90 for Budget Office activities. The reduction to the FY 87 OPPE account is the result of including the $1,000 request in the Program Funds budget.
e/ Includes Special Events and Special Projects.
f/ During FY 85 this program was transferred to the Chairman's Office from the Office of the Deputy to the Chairman for Private Partnership.
g/ During FY 85 the functions of this office were decentralized and assumed by various offices in conjunction with the President's Committee on the Arts and the Humanities (PCAH).
h/ Excludes reimbursement from National Endowment for the Humanities's for one half of the PCAH expenses.

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NATIONAL ENDOWMENT FOR THE HUMANITIES

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"In 1933, Alfred North Whitehead listed the five most important qualities of a civilized society as truth, beauty, adventure, art, and peace. We must never forget that it is the humanities -- their study, their preservation, and their growth -- that provide the intellectual underpinnings for our values as a civilization, and deepen our understanding and appreciation of truth, beauty, adventure, art and, yes, peace.

"I want to express my personal commitment to the humanities and to reaffirm the Administration's support of the National Endowment for the Humanities. While the federal government doesn't have the resources to be the major source of funding for the humanities, our Administration has shown that it can use its limited resources to support the basic disciplines and essential activities of the humanities. It also has shown that through example and encouragement the federal government can attempt to stimulate increased private sector giving for the support of the humanities. We believe that such federal activity is appropriate, for the humanities are crucial to the vitality of our Nation's educational and cultural life and the maintenance of our civilization."

-- Ronald Reagan

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SUMMARY STATEMENT

The National Endowment for the Humanities requests $126.44 million for FY 1987 to support and improve teaching, learning, and research in the humanities in the United States --

-- $83.14 million in definite program funds;

-- $12.50 million in indefinite funds to match private gifts raised in support of humanities projects;

-- $16.50 million in indefinite funds for Challenge Grants in support of humanities institutions and organizations; and

-- $14.30 million in administrative funds.

I. The Endowment and The State of the Humanities

In the 1965 legislation that established the National Endowment for the Humanities, the Congress declared that "encouragement and support of national progress and scholarship in the humanities. . ., while primarily a matter for private and local initiative, is also an appropriate matter of concern to the Federal Government." The Congress wisely recognized that the federal government must never be the dominant partner in supporting the humanities.

Although the Endowment plays a relatively minor financial role in supporting work in the humanities, the agency has a constructive national presence. It encourages individuals, businesses, and foundations to contribute to the humanities. It provides funds that mean a "margin of possibility" for exemplary projects and programs. And, most importantly, it is a forceful and persistent advocate for the highest standards in teaching, scholarship, and general audience programming in the humanities.

In recent years, the agency has joined with private and public efforts to revive and strengthen the presence of the humanities in American life. Indeed, the potential for promoting and advancing the humanities throughout the nation today is enormous. Never in history have such seemingly limitless opportunities been available for passing on the knowledge, wisdom, and experience of the ages. The number of colleges and universities is at an all time high, and enrollments remain at high levels. Museums and historical organizations are flourishing, and visitorship increases every year. Our libraries are reaching ever greater numbers of people. Significant books and articles on the humanities continue to be published.

Yet in addition to the promise suggested by this vast network, problems persist. There are major shortcomings in the way the humanities are taught, learned, practiced, and presented that should command closer attention from humanities institutions, administrators, and scholars, and from concerned citizens. One of the most critical of these problems, and one that suggests ominous consequences for the future, is that considerable numbers of students are graduating from American schools and colleges who are ignorant of the history and culture of their nation and of the world at large.

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According to the early results of a survey recently begun by the National Assessment of Educational Progress (NAEP), precollegiate knowledge of the humanities in the United States today is sadly lacking. The NAEP, part of the Educational Testing Service of Princeton, New Jersey, is assessing students' knowledge of history and literature as they near the end of their high school careers. The recently publicized results of a pilot study conducted as part of this survey are disheartening. Of the students tested so far, the survey found that a third did not know that the Declaration of Independence was signed between 1750 and 1800; a third did not know that Columbus sailed for the New World before 1750; and three-fourths could not identify Walt Whitman or Henry David Thoreau or Carl Sandburg. These students' lack of knowledge of other nations and world affairs is even more appalling. One-half of the high school seniors tested did not recognize the names of Winston Churchill or Joseph Stalin; only one-third could identify Great Britain or France, or West Germany on a map of Europe; and only one in seven students could locate the Soviet Union.

The gaps in the acquired knowledge of our high school students mirror deficiencies at other levels of our educational system that have been identified in numerous studies and reports released in the last three years. The Endowment's own study of the state of learning in the humanities in higher education -- To Reclaim a Legacy -- concluded that many college graduates today lack even rudimentary knowledge of the origins and developments of the United States, let alone the history of other nations. This is not surprising considering that at three of every four American colleges a student can graduate without having had a course in European history, American history, or American literature, and that foreign language study is required by less than half of all colleges for graduation.

These educational failures have wide implications, for they portend a future population that will be mortally deficient in knowledge about the origins and nature of their own nation and ignorant of the cultures and nations beyond its borders. This ignorance will strike at the heart of one of the central premises of our nation -- that the success of democracy is predicated on the wisdom of an informed citizenry. And the frightening truth is, if the heritage of the past, as embodied by the humanities, is not transmitted in all its richness and fullness to the next generation of citizens, it can be easily lost.

This sorry state of learning in the humanities is emblematic of other problems in the way our society transmits an understanding of the past. While in some respects the humanities research being done in the United States ranks among the finest anywhere in the world, too many scholars produce work that is lifeless and trivial. And, in avenues open for reaching the general public -- television, radio, museums, and libraries -- missed opportunities abound for engaging audiences in programming that is challenging and intellectually vibrant.

To combat Americans' apparent lack of knowledge of their nation and other cultures, in September 1985 the Endowment announced, in conjunction with Senator Hatch and Senator Simon, two special grant initiatives: "Understanding America" and "Understanding Other Nations." These initiatives will make grant funds available throughout the divisions and programs of the Endowment to schools, colleges, humanities institutions and

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organizations, individual scholars, and the mass media for projects and programs designed to increase understanding and knowledge of this nation and the world among students and the general public.

Through the initiative on "Understanding America," the Endowment is encouraging proposals that will help us recapture for ourselves and our posterity an understanding of the history and culture of this country -- the principles that fashioned it, the events that shaped it, the people who built it, and the writers, poets, and painters who have reflected on it.

The emphasis of the "Understanding Other Nations" initiative is on foreign languages, the traditional entry point into the study of foreign cultures. Through the knowledge of a foreign language we can begin to understand the literary, philosophical, and historical traditions of other nations. The Endowment encourages proposals from schools and colleges to re-establish language instruction or upgrade their present courses.

These initiatives will give resonance to the Endowment's other ongoing efforts to improve teaching, learning, and public programming. Moreover, since they will be supported within established Endowment grant programs, additional program funds will not be needed.

II. The Fiscal 1986 Budget and the Gramm-Rudman-Hollings Balanced Budget Act

Under procedures detailed in the Gramm-Rudman-Hollings Act, the President has issued a sequestration order that would reduce funding for the National Endowment for the Humanities by 4.3 percent for FY 1986. If the sequestration goes into effect, all of the Endowment's appropriated programs and accounts will be reduced uniformly by 4.3 percent.

The Endowment anticipates that the effect of the sequestration on the agency's ability to perform its legislated duties will be minimal since the adjusted budget for FY 1986 -- $132.68 million -- would exceed the Administration's original FY 1986 budget request of $126.33 million by $6.35 million. The adjusted budget would still permit the Endowment to continue its policy of supporting all excellent-rated proposals.

Note: The proposed suquestration is not reflected in grant and award projections for FY 1986 used throughout the remainder of this document.

III. The Fiscal 1987 Budget

A. General Objectives and Priorities

The principal objective of the Endowment's budget plan is to advance research, scholarship, education, and public understanding and appreciation in the humanities in the United States within the context of the mission mandated to the agency by Congress.

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The agency's plan for fiscal 1987 has the following major features:

1. As the Endowment has done in recent years, definite program funds are allocated at about 18-20 percent for each program division. This distribution reflects the view that the divisions have responsibilities that are equally important in carrying out the agency's mission.

2. The amount of treasury funds requested is much higher than in the appropriation for FY 1985 and FY 1986. This request underscores the continuing successes of the divisions of Research, General Programs, and State Programs in stimulating third-party donations to humanities projects and programs.

B. Special Emphases

In addition to the "Understanding America" and "Understanding Other Nations" initiatives discussed above, the Endowment will emphasize the following activities:

Preservation of Humanities Research Resources

In FY 1987, the Endowment will continue to focus attention on the preservation of humanities resources. Through the new Office of Preservation, NEH is making a major effort to halt the devastating physical breakdown of humanities books, documents, and other materials held at archives, libraries, museums, historical organizations, and other repositories throughout the nation. The office has consolidated the Endowment's grant-making efforts involving preservation and is exploring new ways to deal with problems in this area.

The National Endowment for the Humanities is uniquely qualified to assist public and private institutions in this initiative. We are the only federal agency concerned exclusively with advancing and promoting the humanities, and we have a history of supporting projects involving preservation. Funding is provided for training, technological development, and preservation of specific collections or categories of endangered work. NEH also serves as a national spokesman and as a clearinghouse of information about efforts to preserve humanities research resources. The Endowment is working closely with professionals and institutions in the preservation field to plan a rational nationwide strategy for determining how and what documents and other resources should be preserved.

Involving the private sector in this enterprise is a major priority of the office.

NEH will allocate $4 million for the Office of Preservation in FY 1987. Many of the grants and awards made through this program will carry a matching component in order to stimulate non-federal contributions.

Bicentennial of the U.S. Constitution

The two-hundredth anniversary of the United States Constitution offers a special opportunity for encouraging both renewed scholarly interest and public reflection on the principles and foundations of constitutional government. Toward this end the

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Endowment initiated an effort in 1982 to provide support for the study and public appreciation of the history and principles of the United States Constitution. This emphasis will be continued in FY 1987. The Endowment is supporting proposals involving studies by scholars over the whole range of philosophical and historical questions raised by the Constitution and the founding period. This initiative is centered in General Programs, but projects relating to the Bicentennial are supported in every division. In the last three years 155 projects have received funding totaling $10.5 million.

Masterworks in the Humanities for Television

In FY 1987 the Endowment will continue its initiative in the Humanities Projects in Media Program to encourage projects concerned with interpreting masterworks in the humanities for general audiences. A number of projects will be supported to produce significant, high-quality productions which examine or dramatize classic works in the humanities or significant historical events.

C. Specific Programmatic Effects

This section outlines on a division-by-division basis the major features of the Endowment's 1987 program plan.

1. Education Programs

The Division of Education Programs will continue its present programming in fiscal 1987 with few changes. The categories of support instituted when the division was reorganized in 1983 have proven to be very effective and have been applauded by educators and administrators.

Humanities Instruction in Elementary and Secondary Schools

This program helps schools, teachers, and administrators strengthen the teaching of the humanities through programs of rigorous study and through collaborative projects with humanities scholars in universities. In FY 1987 the program will continue to place primary emphasis on supporting Institutes for Teachers and Administrators, although it will also be receptive to proposals in other project formats. With $5.3 million, approximately 45 grants would be made.

Exemplary Projects and Humanities Programs for Nontraditional Learners

This program will continue to support higher education projects which address individual subjects, serve as models for other institutions, cut across institutional boundaries, and disseminate the products of humanities scholarship. At a funding level of $4.55 million, about 35 projects would be supported.

Central Disciplines in Undergraduate Education

This program will continue to support projects that improve the quality of undergraduate education available to humanities

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majors and non-majors alike. Three basic activities are supported: Improving Introductory Courses, Promoting Excellence in a Field, and Fostering Coherence Throughout an Institution. At the request level, about 50 grants would be made.

2. Fellowships and Seminars

The programs of this division provide important support for advanced research in the humanities as well as for the improvement of humanities teaching at all levels. Both objectives are central to the mission of the agency.

Fellowships for University Teachers and Fellowships for College Teachers and Independent Scholars

These programs provide support for advanced research in the humanities and for the improvement of humanities teaching. About 130 fellowships -- all of the top-rated applications anticipated -- will be funded in each program. This includes support for an estimated ten Historically Black Colleges and Universities Faculty Graduate Study Fellowships. Also, Constitutional Fellowships will continue to be supported in each program and will compete on an equal basis with other applications.

Summer Stipends

This program provides short-term support during the summer months for university and college faculty and independent scholars conducting research in the humanities. At $750,000, about 215 stipends would be awarded.

Travel to Collections

This program offers small awards for travel expenses of scholars who need to consult the research collections of libraries, archives, museums, and other repositories in North America and Western Europe. With funding of $300,000, 400 grants would be possible.

Younger Scholars

This program provides an opportunity to high school and undergraduate college students to conduct research and writing projects in the humanities during the summer. Younger Scholars has been transferred to Fellowships from the Division of General Programs because the projects funded by the program are essentially research fellowships and not general audience activities. With funding of $400,000, about 200 awards would be made.

Summer Seminars for College Teachers

This program provides opportunities for college teachers and qualified individuals not affiliated with academic institutions to attend seminars during the summer to study in their humanities

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fields with distinguished scholars. The purpose of the program is to renew the participants' contact with scholarly research and to revitalize their teaching of the humanities. In FY 1987 funds of $3.87 million will support 53 seminars.

Summer Seminars for Secondary School Teachers

This program offers an opportunity for secondary school teachers to read and study basic humanities texts and documents under the direction of eminent teacher-scholars. Seminar participants are thereby able to broaden their knowledge of the humanities and improve their ability to teach the humanities. The Endowment would support 55 seminars with funding of $3.64 million.

3. General Programs

The Division of General Programs will continue to have as its goal the transmission of the most important works and scholarship in the humanities into projects directed toward general, nonacademic audiences. Projects supported through programs of the division must:

-- involve the public in the appreciation and interpretation of cultural works;

-- illuminate historical ideas, figures, and events; and/or

-- increase the public's understanding of the disciplines of the humanities.

Humanities Projects in Media

The Media program supports dramatizations of "masterworks" in the humanities, cultural and literary documentaries, programs for children and youth, and programs relating to the Bicentennial of the Constitution. With an allocation of $7 million about 40-45 media projects would be funded.

Humanities Projects in Museums and Historical Organizations

This program supports projects in museums and historical organizations which interpret the humanities for the general public. Awards are also made to institutions to improve the management of their collections, to enhance the interpretive skills of museum and historical organizations professionals, and to conduct self-study projects. In FY 1987, about 80 grants would be made with funding of $5.8 million.

Public Humanities Projects

This program supports projects that engage adult and youth groups in interpretive programs in the humanities, including proposals submitted in response to the Endowment's special initiative to observe the Bicentennial of the Constitution of the United States. About 35 projects will be funded with an allocation of $2 million.

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Humanities Projects in Libraries

This program supports educational programs in libraries that contribute to the public's appreciation and understanding of the humanities. Formats include reading and discussion programs, conferences, lectures, and interpretive exhibitions. In FY 1987 approximately 15-20 projects would be supported at a funding level of $1.4 million.

4. Research Programs

Programs of the Research Division support the development of advanced, original research in all fields and disciplines of the humanities, the preparation for publication of basic reference texts, the preparation of research materials that improve access to humanities collections, and the efforts of non-federal scholarly groups and organizations to support research in particular areas of the humanities.

In FY 1986 the programs of the Research Division were reorganized to give the Endowment more flexibility to relate funding to the flow of quality applications. The new programming arrangement enables the Endowment to be more responsive to the research concerns and interests of humanities scholars.

Texts Program

This program, consisting of the Editions, Translations, and Publication Subvention categories, will support the preparation of research texts and the publication of significant books in the humanities. In FY 1987, with funding of $2.25 million Editions would support about 30 projects; funding of $900,000 would support about 25 Translations projects; and funds of $400,000 would support about 65 awards in the Publication Subvention category.

Reference Materials Program

This program, composed of the Tools and Access categories, supports the production of finding aids and other reference materials used by research scholars preparing interpretive humanities works. In Tools, funds of $2.75 million would support about 30 awards. Access awards would total about 35 with funding of $2.40 million.

Interpretive Research Program

This program supports original scholarly research in all fields of the humanities. With funds of $2.80 million, about 45 Projects applicants would receive awards. In the Humanities, Science and Technology category, at least 10 awards would be made in FY 1987 with an allocation of $600,000.

Regrants Program

This program, made up of the Conferences, International Research, Centers for Advanced Study, and Regrants in Selected areas categories, makes awards to organizations and institutions

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who then regrant the funds to support projects that advance research in the humanities. In FY 1987 Conferences would make 25-30 awards with funding of $400,000; large, broad-based conferences will be emphasized. The seven regrant activities we have supported for a number of years in the International Research program will be continued in FY 1987. Funding for Centers will support ten awards at the request level of $755,000. The Regrants in Selected Areas category will be allocated $143,000 plus additional money in treasury funds.

5. State Programs

The Division of State Programs provides grants to the state humanities councils established in all states of the Union, the District of Columbia, Puerto Rico, and the Virgin Islands. The councils in turn regrant federal funds to individual projects and programs in their states. In FY 1987 the division will continue its efforts to improve the quality of the regrants of the state councils and to ensure that all activities that receive support are solidly within the humanities. As part of this effort, the division will continue to conduct an annual competition for Exemplary Awards, which provide additional funds to the councils for regrant projects of exceptional merit. State Programs would be allocated $16.63 million to support councils in 53 states and territories and enable the councils to make over 2,900 regrants.

6. Office of Preservation

This office provides national leadership to institutions and organizations committed to addressing the problem of the deterioration of humanities research materials in the nation's libraries, archives, and other repositories. Preservation will continue to be one of the Endowment's major initiatives in fiscal 1987. Funding of $4 million will support about 20 projects.

7. Challenge Grants

Challenge Grants help humanities institutions improve their financial stability by offering federal funds to match third-party contributions; a minimum of three non-federal dollars is required to release each federal dollar. This federal-private partnership contributes to the long range economic health of the institution and enhances its ability to deliver humanities services and programs.

At the request level of $16.5 million, funds will be sufficient to support all excellent-rated first-time applications and almost all of the excellent-rated second-time applications; a total of about 40 grants would be made.

8. Treasury Funds

The Endowment is committed to increasing, wherever possible, the role of third-party support of humanities activities. Treasury funds are used by the Endowment to stimulate new and increased giving to the humanities by private contributors. NEH matches on up to a one-to-one basis all non-federal dollars contributed to projects with matching grants. The treasury funds of $12.5 million

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requested for FY 1987 would be the highest amount in the history of the Endowment; these funds would generate a minimum of $12.5 million in private contributions to individual humanities projects.

9. Administrative Funds

Administrative funds would be slightly higher than in previous years. The House Appropriations Subcommittee has indicated that Humanities Studies is to be supported in the administrative account. In addition, the full cost of the Intergovernmental Personnel Act (IPA) program is included in administrative funds in FY 1987. Finally, Endowment personnel costs, which account for a majority of the administrative budget, increase slightly in FY 1987.

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Rescission of Funds for the National Capital Arts and Cultural Affairs Program

The Administration is proposing a rescission of the $1.988 million appropriated to the National Endowment for the Humanities for the National Capital Arts and Cultural Affairs program for FY 1986. This program was authorized by the Congress in FY 1986 (P.L. 99-190) to provide grants to arts and cultural organizations in the District of Columbia. The Administration and the Endowment maintain that such special treatment for these institutions is unnecessary and cannot be justified in view of efforts to reduce the federal deficit.

The grants authorized in P.L. 99-190 are essentially direct subsidy payments of up to $500,000 to select Washington, D.C. organizations. In fulfilling its Congressional mandate, the Endowment has historically awarded grants to individuals and organizations only after consideration by peer panels, review by the National Council on the Humanities, and final examination by the NEH Chairman. In all programs of the Endowment, applicants must compete for available funding and only the most meritorious receive support. In addition, the agency does not, under any circumstances, provide direct subsidies or general operating support to institutions or organizations. All applicants to the NEH Challenge Grants Program, for example, must demonstrate that a grant would advance their capacity for maintaining or initiating programs in the humanities.

The institutions listed in P.L. 99-190 are currently eligible to apply to the Endowment's regular grant programs. The Endowment encourages the submission of applications from these institutions to advance the humanities in their programming activities. Indeed, in the last three years, many of these organizations have received awards after competing successfully against other applicants. The National Endowment for the Arts and the Institute of Museum Services have also made awards to these organizations. Special direct subsidies for general operating support are neither necessary nor warranted.

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Budget Analyses

A. Summary of Appropriations
(in thousands of dollars)

	FY 1985 Actual	FY 1986* Approp.	FY 1987 Request	FY 1985-86 Increase or Decrease (-)
Appropriation-Definite				
Program funds	$ 95,207	$ 96,038	$ 83,140	$(12,898)
Administrative funds	13,891	14,115	14,300	185
Total Definite	109,098	110,153	97,440	(12,713)
Appropriation-Indefinite				
Challenge funds	19,600	16,898	16,500	(398)
Treasury funds	10,780	11,590	12,500	910
Total Indefinite	30,380	28,488	29,000	512
Total Humanities	$139,478	$138,641	$126,440	$(12,201)
National Capital Arts and Cultural Affairs	--	$ 1,988[1]/	--	$ (1,988)

1/ Funds have been proposed for rescission in FY 1986. No funds are requested in FY 1987.

* Does not reflect the 4.3 percent reduction pursuant to the Balanced Budget and Emergency Deficit Control Act of 1985 (Gramm-Rudman-Hollings Act).

NATIONAL ENDOWMENT FOR THE HUMANITIES
Budget Analysis
B. Analysis by Appropriation and Program
(in thousands of dollars)

Appropriation/Program	FY 1985 Actual	FY 1986* Approp.	FY 1987 Request	FY 1986-87 Increase or Decrease (-)
I. DEFINITE PROGRAM APPROPRIATION	$95,207	$96,038	$83,140	$(12,898)
Education Programs	17,890	16,401	15,150	(1,251)
Humanities Instruction in Elementary and Secondary Schools	7,967	5,900	5,300	(600)
Exemplary Projects and Humanities Programs for Nontraditional Learners	5,032	4,601	4,550	(51)
Central Disciplines in Undergraduate Education	4,890	5,900	5,300	(600)
Fellowships and Seminars	14,396	14,987	15,460	473
NEH Fellowships				
University Teachers	3,362	3,775	3,250	(525)
College Teachers and Independent Scholars	2,655	3,025	3,250	225
Summer Stipends	657	700	750	50
Travel to Collections	1/	250	300	50
Younger Scholars	2/	2/	400	400
Summer Seminars				
College Teachers	3,998	3,477	3,870	393
Secondary School Teachers	2,824	3,760	3,640	(120)
Centers for Advanced Study	900	3/	3/	--

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B. Analysis by Appropriation and Program (cont'd)

Appropriation/Program	FY 1985 Actual	FY 1986* Approp.	FY 1987 Request	FY 1986-87 Increase or Decrease (-)
General Programs	$22,671	$23,187	$16,200	$(6,987)
Humanities Projects in Media	8,707	8,864	7,000	(1,864)
Humanities Projects in Museums and Historical Organizations	8,965	8,767	5,800	(2,967)
Humanities Projects for Youth	663	745	4/	(745)
Public Humanities Projects 3/	1,562	1,889	2,000	111
Humanities Projects in Libraries	2,773	2,922	1,400	(1,522)
Research Programs	18,837	16,401	15,700	(701)
Texts				
Editions	2,714	2,450	2,250	(200)
Translations	1,107	1,000	900	(100)
Publication Subvention	326	400	400	--
Reference Materials				
Tools	3,369	2,850	2,750	(100)
Access	4,662 6/	2,500	2,400	(100)
Interpretive Research				
Projects	3,211	2,900	2,800	(100)
Humanities, Science and Technology	695	650	600	(50)
Travel to Collections	206	1/	1/	--
Regrants				
Conferences	347	400	400	--
Centers for Advanced Study	3/	806	755	(51)
International	2,200	2,300	2,300	--
Regrants in Selected Areas	--	145	145	--

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B. Analysis by Appropriation and Program (cont'd)

Appropriation/Program	FY 1985 Actual	FY 1986* Approp.	FY 1987 Request	FY 1986-87 Increase or Decrease (-)
State Programs	$ 21,413	$ 21,086	$ 16,630	$ (4,456)
Office of Preservation	--	3,976	4,000	24
II. INDEFINITE FUNDS	30,380	28,488	29,000	512
Challenge funds	19,600	16,898	16,500	(398)
Treasury funds	10,780	11,590	12,500	910
III. ADMINISTRATIVE FUNDS	13,891	14,115	14,300	185
Total Humanities	$139,478	$138,641	$126,440	$(12,201)
IV. NATIONAL CAPITAL ARTS AND CULTURAL AFFAIRS	--	$1,988 7/	--	$(1,988)

1/ Included in Research in FY 1985; included in Fellowships in FY 1986 and FY 1987.
2/ Included in General Programs in FY 1985 and FY 1986; included in Fellowships in FY 1987.
3/ Included in Fellowships in FY 1985; included in Research in FY 1986 and FY 1987.
4/ In FY 1987, Younger Scholars is included in Fellowships; Youth Projects has been discontinued.
5/ Formerly Humanities Projects for Adults.
6/ Includes Preservation and U.S. Newspapers in FY 1985. These activities are included in the Office of Preservation in FY 1986 and FY 1987.
7/ Funds have been proposed for rescission in FY 1986. No funds are requested in FY 1987.

* Does not reflect the 4.3 percent reduction pursuant to the Balanced Budget and Emergency Deficit Control Act of 1985 (Gramm-Rudman-Hollings Act).

NOTE: Detail may not add due to rounding.

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EDUCATION PROGRAMS
(Definite Funds in Thousands)

Programs	FY 1985 Actual	FY 1986* Approp.	FY 1987 Request	FY 1986-87 Increase or Decrease (-)
Humanities Instruction in Elementary and Secondary Schools	$ 7,967	$ 5,900	$ 5,300	$ (600)
Exemplary Projects and Humanities Programs for Nontraditional Learners	5,032	4,601	4,550	(51)
Central Disciplines in Undergraduate Education	4,890	5,900	5,300	(600)
Total	$17,890	$16,401	$15,150	$(1,251)

* Does not reflect the 4.3 percent reduction pursuant to the Balanced Budget and Emergency Deficit Control Act of 1985 (Gramm-Rudman-Hollings Act).

EDUCATION PROGRAMS
($15,150,000)

As the Endowment's principal means of fulfilling the Congressional mandate "to initiate and support . . . programs to strengthen . . . the teaching potential of the United States in the humanities," the Division of Education Programs encourages efforts to improve humanities instruction and restore the humanities to their proper role in the life of our nation's educational institutions. In addressing these objectives the division's guidelines focus primarily on the enhancement of traditional undergraduate programs and programs in elementary and secondary schools. The division also welcomes proposals in support of nontraditional undergraduate programs, graduate programs (both traditional and nontraditional), and efforts to develop closer coordination among institutions, organizations, and school systems that would benefit from cooperative endeavors. In recent years the division has also launched several special initiatives, among them a concerted effort to help new teachers begin their careers more firmly grounded in the subjects that are central to the humanities curriculum.

Because the work of the Endowment represents only a small part of the nation's commitment to the transmission of knowledge in the humanities, the division's grants in support of humanities education are usually restricted to projects that are in some way exemplary; that is, to projects that provide a visible example of achievement that others may aspire to or imitate. Because the Endowment should not be the sole source of funding for any kind of humanities activity, the division also exercises its leverage to stimulate a high level of third-party participation in the projects receiving awards. By highlighting humanities programs that are stellar in quality and are of such fundamental importance that they are likely to attract support from a variety of sources, the division has found that it can contribute to a healthful diversity in the sources of funding for those institutions that provide a setting for such programs.

The current objectives of the Education Division have served the agency well. They have placed the Endowment at the forefront of the much-praised "excellence movement" in the nation's schools, colleges, and universities, thereby helping to bring about a long-overdue reassessment of the humanities curriculum and a refocusing of attention on the texts and topics and disciplines that are most critical to the preservation of the nation's cultural heritage. They have encouraged more rigor in the teaching of the humanities, more attention to the development of students' capacities for critical thinking and clear expression, and more stress on effective expository writing. They have provided a wide range of opportunities for the nation's humanities teachers to improve their preparation in the subjects for which they are responsible and have significantly augmented the collaboration between secondary schools and institutions of higher learning, particularly in our nation's major population centers. Because the division's present objectives have had such a positive influence, and because they continue to promote the kinds of improvements called for in one national report after another, the Endowment sees no reason to alter their basic thrust. In FY 1987, therefore, the Division of Education Programs will continue its commitment to the same broad goals that were articulated when the division was reorganized in FY 1983.

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As in the recent past, the Division of Education Programs will organize its programs under three major headings: (1) Humanities Instruction in Elementary and Secondary Schools, (2) Exemplary Projects and Humanities Programs for Nontraditional Learners, and (3) Central Disciplines in Undergraduate Education. The principal focus of the first program area will continue to be summer institutes and follow-up activities for elementary and secondary teachers and administrators. The second program area will continue to emphasize summer institutes for college and university teachers, consortial endeavors for the improvement of undergraduate and graduate education, and projects of various types to enhance the educational opportunities available for nontraditional learners. And the third program area will continue to encourage institutional efforts to revitalize introductory courses in the humanities, to promote excellence in particular fields of the humanities, and to foster coherence throughout the humanities curriculum.

The three program areas will continue to be defined with sufficient flexibility to allow the division to be receptive to a variety of means to the achievement of well-defined ends. Thus, in the Elementary and Secondary program, for instance, there will be grants in support of collaborative projects to link elementary and secondary schools with colleges and universities; and there will be planning grants and grants for conferences on special issues in precollegiate humanities education. Similarly, in the division's Exemplary Projects and Nontraditional Learners programs, grants will support multi-institutional projects to enhance the quality and accessibility of undergraduate and graduate humanities education, graduate programs to improve the preparation of humanities teachers at various levels, and conferences and workshops to explore significant issues in the study of the humanities today. And finally, in the division's Central Disciplines program, grants will encourage curricular planning and support activities designed to reinforce institutional efforts to restore the humanities to the center of undergraduate education: faculty development workshops, for example, as well as consultant services, visiting lectureships, bibliographic instruction programs, and library utilization projects.

Throughout the division, the emphasis will remain on strengthening the disciplines central to the curriculum (history, philosophy, literature, and classical and modern languages), and on encouraging institutions to teach these and other humanities disciplines more effectively to all students, not just to students planning to pursue more advanced work in the humanities. Throughout the division, moreover, it will continue to be possible for a broad range of worthy projects to be considered for support, whether or not they fit neatly under any one program heading. This will be particularly true of projects proposed in response to the Endowment-wide initiatives on "Understanding America," "Understanding Other Nations," the Bicentennial of the Constitution, and the Quincentennial of the voyages of Columbus. Proposals related to all of these initiatives will be welcomed in any of the division's categories, and the division will also be receptive to proposals that cut across the usual program headings.

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1. Humanities Instruction in Elementary and Secondary Schools ($5,300,000)

The principal objective of the Humanities Instruction in Elementary and Secondary Schools Program is to support teacher-training activities. This objective is based on the premise that the key to instructional effectiveness is a recognition that humanities teachers should be thoroughly grounded in the subjects they introduce to their students.

Under the Institutes for Teachers and Administrators category the division encourages efforts to bring together teachers and administrators for a period of intensive summer study, usually anchored in important ideas and texts in the humanities. After the summer is over, the institutions that receive and oversee these grants for elementary and secondary institutes provide extensive follow-up and in-service activities to help participants apply the summer's work to their classrooms or to their schools' administrative planning in the humanities. As an indication of their commitment to the project, individual schools are required to share the participation costs of their representatives.

Under the Collaborative Projects category the division offers support for groups of elementary and secondary school teachers and college and university professors who, as delegates of their institutions, wish to establish a systematic and sustained relationship between the schools and institutions of higher education in a given region. Experience has shown that collaboration of this kind can be an important means of improving humanities teaching in the schools. Because collaboration among institutions is often difficult to initiate and to sustain, however, support from the Endowment is predicated on a commitment by the institutions to continue their collaboration after grant support has ended. Reliance on matching funds, encouraged in virtually all division grants, is required in these multi-year collaborative projects.

In FY 1985 the Elementary and Secondary program awarded 56 grants from 197 applications. For FY 1986 the program expects to award 45 grants from approximately 160 applications.

The program's plans and priorities for FY 1987 resemble those of preceding years. Once again, the emphasis will be on the humanities disciplines that are most commonly taught in the schools: English, history, and foreign languages. Although most projects will still be designed primarily for the benefit of secondary school teachers, the division anticipates a continued increase in the number of proposals designed for elementary school teachers and administrators. In FY 1987 the program expects to award 45 grants from approximately 160 applications.

Examples of Supported Projects

(1) Harvard University received a grant of $100,000 to conduct a summer institute on the history and culture of the Soviet Union. Thirty secondary school teachers from New England devoted five weeks to an intensive study of significant primary and secondary sources, an assessment of traditional interpretations of

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Russian history and culture, and a review of the most recent scholarship on the Soviet Union. Follow-up sessions will take place during the 1985-86 academic year.

(ii) The University of Oregon received a $206,867 grant to conduct a two-year collaborative project on literature and history. During each of the summers of the project (1985 and 1986), seventeen two-member teams, each composed of a teacher and an administrator from a Willamette Valley high school, will study the history and literature of a specific country in an institute jointly conducted by a language professor, a history professor, and a master secondary school teacher. During the academic year that follows, the participants from each institute will attend workshops designed to help them develop curricula for their schools.

2. Exemplary Projects and Humanities Programs for Nontraditional Learners ($4,550,000)

In this program, the division will continue to encourage efforts to strengthen the preparation of college and university teachers of the humanities. As its first priority, the Exemplary Projects in Undergraduate and Graduate Education category will maintain its present emphasis on institutes to bring college and university faculty together with distinguished scholars for intensive study of central works and ideas in the humanities. The program will also provide funds for conferences and workshops designed to incorporate important scholarship and curricular revision into undergraduate and graduate instruction. The program will be especially receptive to proposals aimed at promoting the discussion of substantive questions related to the teaching of the humanities at the undergraduate and graduate levels, particularly when those proposals are designed to strengthen the teacher-preparation components of graduate programs in the humanities. The program will provide support for multi-institutional projects in curriculum review and faculty development. And on rare occasions the program will help fund the creation and dissemination of curricular materials that satisfy a widely-recognized critical need in the nation's colleges and universities.

Through its Humanities Programs for Nontraditional Learners category, the division will continue its efforts to strengthen the quality of the humanities instruction available for adult students whose other responsibilities and commitments prevent them from participating in traditional academic pursuits. The division will continue to require that courses and other programs proposed for funding be rigorous in their content and in their expectations about student performance.

In FY 1985 the Exemplary Projects and Nontraditional Learners programs received 85 applications and awarded 30 grants. In FY 1986 the two programs expect to make 35 awards in response to 100 applications.

In FY 1987 the Exemplary Projects and Nontraditional Learners programs expect to award 35 grants from a total of 100 applications.

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Examples of Supported Projects

(i) Duke University received a grant of $102,710 to support a six-week summer 1985 institute for twenty-five college and university faculty interested in the literary and historical contexts of the Essays of Montaigne. The participants were all faculty who teach great authors in undergraduate world literature courses, comparative literature courses, or interdisciplinary courses focusing on the Renaissance. The institute was designed to deepen the participants' understanding of one of the major figures of the early modern period, and it should thus enable them to introduce Montaigne's writings with more confidence and authority.

(ii) The Linguistic Society of America was awarded $70,000 in support of a comprehensive two-year project to clarify and strengthen the role of linguistics in the undergraduate curriculum. The Endowment grant will support 40 percent of the costs of the project, with most of the remainder to be underwritten by foundation grants. After the Society completes the first phase of its project -- a thorough study of the existing curricula in the nation's linguistic programs -- it will develop a set of model curricula for implementation in several institutions of higher learning.

(iii) Johns Hopkins University's School of Continuing Studies received a $150,000 grant for three regional workshops to disseminate information about humanities programs for nontraditional learners. The workshops will be held at three sites -- Johns Hopkins University, the University of California at Berkeley, and Washington University in St. Louis -- and they will be organized to accomplish four purposes: to provide a forum for the discussion of key issues in humanities instruction for nontraditional learners; to provide information about successful programs already in existence; to establish a network of program directors; and to enable institutions to learn more about available resources as they establish new humanities programs for nontraditional learners. Each workshop will be built around twelve presentations, and each will be attended by representatives of twenty institutions selected on the strength of their applications.

3. Central Disciplines in Undergraduate Education ($5,300,000)

The purpose of this program is to assist colleges and universities in establishing or sustaining the disciplines of the humanities in a central role in undergraduate education. Endowment funds augment the commitment already made by an institution to strengthen the humanities. Three types of activity are eligible for support: Improving Introductory Courses, Promoting Excellence in a Field, and Fostering Conerence Throughout an Institution. The first category assists institutions in developing sound lower-division course offerings; the second enables institutions to extend the success they have had in making specific fields of the humanities more rigorous and more heavily enrolled by students; and the third supports institution-wide plans to strengthen all the humanities disciplines taught on a campus.

Support for college-level teaching of the basic disciplines of the humanities is one of the most important ways the Endowment fulfills its mandate to promote the study of civilization. Since

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nearly 90 percent of the humanities courses taught in our nation's colleges and universities are at the freshman and sophomore levels, and since students' decisions about whether to pursue further study of the humanities often depend on the quality of the teaching in these introductory courses, the program is giving particular attention to humanities offerings for general students in the Improving Introductory Courses category. Meanwhile, the program is also encouraging projects that will lead to greater cooperation between libraries and humanities departments endeavoring to help students make more effective use of printed and audiovisual resources.

In the Promoting Excellence in a Field category, the Endowment seeks to establish greater depth in the offerings available in particular fields of the humanities. Through this category the division also helps colleges and universities surmount the often artificial distinction between teaching and research. In FY 1987 the program will emphasize strengthening the study of foreign languages.

The Fostering Coherence Throughout an Institution category, will make some awards designed to help institutions with the conceptual stages of curricular review and program planning in the humanities. Other grants will help institutions with the costly implementation phases of curricular restructuring: the addition of new positions in areas of pivotal importance, the funding of faculty development activities, and the support of consultant services and visiting professorships to improve particular aspects of the humanities program. Large grants awarded in this category normally include substantial matching components.

In FY 1985, 53 Central Disciplines program grants were made in response to 144 applications. During FY 1986, the program expects to award 55 grants in response to 150 applications.

Plans for FY 1987 call for maintaining the present priorities in the Central Disciplines Program. Projects fostering cooperation between libraries and departments in the humanities will be encouraged. Projects at the undergraduate level to improve the preparation of new teachers in the humanities will receive particular emphasis. Projects to promote evaluation of existing offerings in the humanities will be welcomed, especially when they promise to lead to curricular improvements and to more effective undergraduate teaching. The program will continue to emphasize the use of federal matching funds to promote institutional development in the humanities. In FY 1987 the program expects to make 50 awards from approximately 160 applications.

Examples of Supported Projects

(i) Beloit College in Wisconsin has received $102,226 in Endowment support under the Improving Introductory Courses category to reconfigure a freshman core course on major texts in the humanities. Components of the project include a roster of faculty development workshops, a visiting lecturer series, a library acquisitions effort to provide materials relevant to the course, and a consultant program to assist the faculty in the workshops.

(ii) Hunter College of the City University of New York has been awarded a $193,444 grant through the Promoting Excellence in a Field category to support the establishment of a revised foreign language curriculum grounded in proficiency testing. The languages

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included in the project are Spanish, French, Italian, and Russian. The grant provides released time for the foreign language faculty to become expert in oral proficiency testing, using the proficiency guidelines of the American Council for the Teaching of Foreign Languages.

(iii) Highline Community College in Midway, Washington, has been awarded a $155,251 grant in the Fostering Coherence Throughout an Institution category to implemant a comprehensive plan for strengthening its core courses in the humanities. Faculty development activities will focus on core courses in literature and Western civilization; consultants with expertise in these areas will be brought in to conduct faculty workshops.

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FELLOWSHIPS AND SEMINARS PROGRAMS
(Definite Funds in Thousands)

Programs	FY 1985 Actual	FY 1986* Approp.	FY 1987 Request	FY 1986-87 Increase or Decrease (-)
NEH Fellowships				
University Teachers	$ 3,362	$ 3,775	$ 3,250	$(525)
College Teachers and Independent Scholars	2,655	3,025	3,250	225
Summer Stipends	457	700	750	50
Travel to Collections	1/	250	300	50
Younger Scholars	2/	2/	400	400
Summer Seminars				
College Teachers	3,998	3,477	3,870	393
Secondary School Teachers	2,824	3,760	3,640	(120)
Centers for Advanced Study	900	3/	3/	--
Total	$14,396	$14,987	$15,460	$ 473

1/ Included in Research in FY 1985; included in Fellowships in FY 1986 and FY 1987.
2/ Included in General Programs in FY 1985 and FY 1986; included in Fellowships in FY 1987.
3/ Included in Fellowships in FY 1985; included in Research in FY 1986 and FY 1987.

* Does not reflect the 4.3 percent reduction pursuant to the Balanced Budget and Emergency Deficit Control Act of 1985 (Gramm-Rudman-Hollings Act).

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FELLOWSHIPS AND SEMINARS PROGRAMS
($15,460,000)

The mission of the Division of Fellowships and Seminars is to recognize and support teaching and research of the highest quality within the humanities. The programs in this division fulfill a purpose legislated by Congress in the Endowment's enabling act -- "the encouragement and support of national progress and scholarship in the humanities."

Scholarly research requires time and resources for individual study and reflection. However, if the ideas derived from scholarly research in the humanities are to inform our understanding of the human experience, those insights and ideas should be examined within a community of inquiry constituted of other thoughtful people. The common thread uniting all the programs of the division is a belief that both the mature scholar and the questioning student have vital intellectual interests in the community of discourse. These interests are predicated upon the principle that in a republic both the specialist and the amateur can and should confront through serious reflection the perennial issues of human experience.

This principle can be realized in part through the Endowment's support of the work of outstanding individual scholars and through support of a variety of collegial seminars. The division provides funding for five fellowship programs and two summer seminar programs. Excellent teaching, scholarship of the highest quality, and serious intellectual inquiry are inseparable from one another. The fellowships and seminars programs apply that principle in the review of applications and the award of funds.

The Endowment is not -- nor should it be -- the sole support for major scholarship and discourse within the humanities. In the words of the Endowment's authorizing legislation, such support should remain "primarily a matter for private and local initiative." What the Endowment strives to provide is leadership by recognizing the best scholarship being done in the nation and by promoting sustained and rigorous opportunities for study by teachers, scholars, and young people. It is no accident that the receipt of an NEH fellowship is regarded as a prestigious honor. The Endowment's program of Summer Seminars for Secondary School Teachers has also received national acclaim. The success of this program was recognized by the Andrew W. Mellon Foundation when it awarded two grants to the Endowment to fund additional seminars in 1984 and 1985.

Fellowships for University Teachers and Fellowships for College Teachers and Independent Scholars are nationally eminent programs and help ensure that important scholarly work can be undertaken. Fellowships for University Teachers provide senior and junior faculty from research institutions with opportunities to study and write about significant topics and texts. College Teacher and Independent Scholar Fellowships offer the same opportunity to unaffiliated scholars and to teachers from two-, four-, and five-yearinstitutions where the demands of a heavy teaching schedule and the absence of consistent sabbatical programs often preclude the intensive scholarship so important to informed teaching.

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Summer Stipends provide two months of intensive study for teachers and scholars to initiate, continue, or complete major research projects. The Travel to Collections Program provides individual researchers $750 to offset the costs of traveling to libraries, archives, or museums vital to the researchers' projects.

The two Summer Seminar programs promote the quality of teaching -- both at the collegiate and secondary levels -- by inviting teachers to participate in collegial communities of inquiry. Summer Seminars for College Teachers offer faculty members at undergraduate colleges, often isolated by geography or other circumstances from the mainstream of scholarship, opportunities to pursue research at major institutions and to test ideas and insights before a dedicated and sympathetic body of colleagues. From its beginning in the summer of 1973 through the summer of 1985, the program has offered over 1,000 seminars and provided rich opportunities to almost 13,000 teachers from more than half the colleges in the United States. Other than a few summer institutes with primarily pedagogical emphases, no other program, either private or federal, provides opportunities of this sort.

Summer Seminars for Secondary School Teachers offer teachers faced with large classes, extracurricular responsibilities, and administrative duties an opportunity for the close study of significant texts and for the intellectual renewal that derives from working with outstanding scholars and devoted colleagues. Nearly 1,900 teachers have enjoyed the national recognition that comes with their selection for the program and also the intellectual and professional renewal intrinsic in participation. Although there are many workshops and institutes for teachers available during the summer, only a handful are devoted to intellectual inquiry rather than to pedagogical concerns. The program has also provided a model that others have emulated. Several colleges and universities, for example, have begun their own summer and year-long programs of cooperative academic support for secondary schools and secondary school teachers.

Paralleling the fellowship and seminar programs for scholars and teachers is a newer program that aims to increase awareness of the value of the humanities among the nation's youth by encouraging them to engage in projects that complement their study in the classroom. The Younger Scholars Program, begun in 1984, provides unique opportunities for high school and college students to undertake independent research and writing projects during a nine-week period in the summer. Working under the supervision of a scholar in the humanities, the students gain the valuable experience of independent study and significantly advance their intellectual development.

In recognition of the Endowment's mission to provide leadership within the humanities, and in recognition of the appropriate modest role of the federal government for support of humanities research, the proposed budget for the Division of Fellowships and Seminars assures that all applications regarded as excellent will receive support.

Support is also provided in the division for graduate fellowships for faculty from historically black colleges and universities, enabling recipients to spend a year working full time on the completion of a doctoral degree in the humanities.

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Each year brings evidence of the qualitative impact of the division's programs. For example, books written with the help of Endowment fellowships have received considerable recognition and numerous prizes. The 1985 Billington Prize awarded by the Organization of American Historians for the outstanding book on the history of the American frontier was won by Francis Paul Prucha for The Great Father: The United States Government and the American Indians (Lincoln: University of Nebraska Press, 1984). Professor Prucha, of Marquette University in Wisconsin, received a Fellowship for Independent Study and Research in 1981-82 to work on this comprehensive history of the relations between the United States and the American Indians from the beginning of the nation to the present day. This two-volume study has been hailed as a valuable reference book for scholars, teachers, students, Indian groups, government officials, and the general public, presenting the material within an interpretive framework and fitting Indian policy into the intellectual and political patterns of the time.

Many teachers in the nation's colleges and secondary schools have revitalized their teaching of the humanities after attending Endowment summer seminar programs. For example, Professor John Wallace directed a seminar for college teachers at the University of Chicago in 1984 on "Literature and Politics in Seventeenth-Century England." Participants from eleven states engaged in intensive reading and discussion of the ways in which literature and politics interacted in seventeenth-century England. College teachers read works of Shakespeare, Jonson, Milton, Hobbes, Locke, and Dryden and examined the ways these authors commented upon the great political crises of the century. Teachers of English literature, literary criticism, and American literature, among other fields, have reported that this seminar led them to revise courses they teach on Shakespeare, English literature, and the English revolution; another participant reported incorporating seminar research into a book chapter.

Programs of the Division of Fellowships and Seminars

1. National Endowment for the Humanities Fellowships

NEH Fellowships offer opportunities to scholars, teachers, and writers to undertake study and research that will encourage thought and knowledge in fields of the humanities. Work resulting from NEH Fellowships is expected to make significant contributions to scholarship, to the general public's understanding of the humanities, and to the substance of individual courses. NEH Fellowships are awarded through two programs, both designed to support experienced and beginning scholars.

Other agencies and private foundations sponsor nationwide fellowship programs in the humanities, resulting in the availability of approximately 500 other major humanities fellowships. The majority of these programs limit their scope of eligibility, however. The NEH Fellowship programs complement the opportunities provided by the private sector and extend the scope of eligibility to all areas of humanistic inquiry and to all scholars working in the humanities.

For FY 1987, in both the Fellowships for University Teachers and the Fellowships for College Teachers and Independent Scholars programs, the Endowment is stressing support of projects in the

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areas of the special NEH initiatives on "Understanding America," "Understanding Other Nations," and the Columbian Quincentenary. In conjunction with the "Understanding America" initiative, the Endowment has established a new category of support through both fellowship programs. Entitled "Fellowships in the Foundations of American Society," awards will encourage scholarly work on the history, literature, culture, and principles of the founding of the United States. Within this category, each program will continue to offer a special competition for Constitutional Fellowships, to encourage study and research on the historical, political, philosophical, and cultural questions raised by the Constitution and the founding period.

a. Fellowships for University Teachers ($3,250,000)

This program provides independent study and research opportunities for faculty members affiliated with departments and programs in universities and post-graduate professional schools that grant Ph.D.s in the humanities. The objective is to improve the quality of teaching, scholarship, and interpretation of the humanities. The program is designed to support persons who have already made significant contributions to the humanities as well as those who stand at the beginning of their careers. Thus, junior and senior scholar-teachers affiliated with Ph.D.-granting departments may apply. The work completed under an NEH fellowship is expected to make a significant contribution to thought and knowledge in the humanities.

Since its inception in 1975, the program has awarded more than 2,450 fellowships, with faculty members at nearly 300 different academic institutions receiving awards. As part of the Endowment's commemoration of the Bicentennial of the Constitution, 25 Constitutional Fellowships have been awarded by the program since 1983.

In addition to the many scholarly articles produced as a result of the fellowships awarded by this program, over 240 books have been published by fellows. Recent Endowment fellows have received prestigious Pulitzer Prizes, National Book Awards, Bancroft Prizes, an American Book Award, and other critical acclaim for publications resulting from these fellowships.

In FY 1985 the Endowment received 1,062 applications and made 134 awards.

For FY 1986 the Endowment received 970 applications and plans to make about 150 awards.

In FY 1987 the Endowment will maintain its commitment to both junior and senior university teachers. It is estimated that 850 applications will be received in FY 1987, and 130 will be awarded at an average cost of $25,000.

Example of Supported Projects

In FY 1981, Gerald D. Nash, a Professor of History at the University of New Mexico, was awarded a part-time fellowship in the amount of $9,184 to study the influence of the Second World War in transforming the trans-Mississippi West. His research resulted in the publication of The American West Transformed: The Impact of the Second World War (Bloomington: Indiana University Press, 1985).

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This volume traces the social and cultural impact of World War II within the context of rapid economic growth in the American West and charts the extraordinary influence of the war on science in the West.

b. Fellowships for College Teachers and Independent Scholars ($3,250,000)

This program offers opportunities for study and research to the estimated 52,000 faculty members in the humanities in the nation's two-year, four-year, and five-year colleges and universities and to scholars and writers working independently. As a result of the support they receive through this program, fellows publish books and articles, present the fruits of their work at conferences, seminars, and lectures, and improve their own and the general public's understanding of subjects in the humanities. The activities of fellows also help encourage further research and improvements of course content among their colleagues at their home institutions.

Both college teachers and independent scholars generally have limited opportunities for research. The colleges in which these teachers work normally require heavy teaching and other institutional responsibilities and offer infrequent sabbatical or other study-leave programs. Scholars working outside colleges and universities often have even less time and fewer materials and resources available for research. While there are other national fellowship programs supporting study and research in the humanities, this is the only program that takes account of the difficult circumstances faced by this particular group of scholars and writers and offers them support for research in recognition of its importance and quality.

The program received 757 applications and made 109 awards in FY 1985. The program received 720 applications and made 121 awards in FY 1986.

For FY 1987 the program expects to receive about 860 applications and make 130 awards.

In response to the special presidential initiative for historically black colleges and universities (HBCUs), the Endowment will continue to support through the program of Fellowships for College Teachers and Independent Scholars approximately ten fellowships for HBCU faculty members for graduate study in the humanities. Last year 34 teachers from 25 institutions applied in this competition, and 10 received awards.

Examples of Supported Projects

(1) Elizabeth Endicott-West, Professor of History at Middlebury College, Vermont, received a FY 1985 grant of $21,600 to investigate how Chinese society functioned during the period of Mongolian rule, the Yuan Dynasty (1272-1368). Concerned with the effects on Chinese society of the presence of the Mongols and their western and Central Asian helpers, she investigated in particular village life, agriculture and landholding, the interaction of Chinese and foreigners, social customs and mores, and crime. Because very little is presently known about this period of Chinese history, the results of her work will be of interest to both fellow scholars and undergraduate history students.

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(11) LaChanze H. Roberts, instructor of English at Morehouse College in Atlanta, Georgia, received an HBCU graduate study fellowship of $27,500 during academic year 1986-87 to complete a dissertation at Columbia University on eight fictional works of Ernest Hemingway. Professor Roberts is examining in particular Hemingway's depiction of the struggle and efforts of modern man to live in the world, to secure a place in the moral order, and to make existence significant.

2. Summer Stipends ($750,000)

The Summer Stipends Program provides support for university and college faculty and for independent scholars working in the humanities. Each award funds work likely to produce an important contribution to the humanities and to enhance the recipient's ability to interpret the humanities. Successful candidates devote two consecutive months, full-time, to projects which may be completed during the stipend tenure or may be part of a long-range endeavor concluded outside the tenure period. In FY 1987 the amount of the stipend will be raised from $3,000 to $3,500 to reflect increases in faculty salaries and in travel and other research expenses.

The Endowment's Summer Stipends Program is the largest of the three major small-grant programs in the United States that support independent study and research in the humanities. Unlike the American Council of Learned Societies' Grants-in-Aid and the American Philosophical Society's research grant programs, both of which fund only specific research expenses such as travel and microfilming, the Summer Stipends Program enables recipients to devote two months of full-time work to particular projects of study and research.

The competition for Summer Stipends is open to independent scholars and writers whose projects are designed to make important contributions to the humanities through independent study and research. Most of the applications, however, come from the estimated 75,000 humanities faculty members at some 3,200 colleges and universities in the United States. Summer Stipends Program guidelines limit to three the number of applications from faculty members at any single institution of higher education in the United States. Consequently, the program supports a large number of teachers at a wide range of academic institutions.

The NEH Summer Stipends program made its first awards in 1967. Through FY 1985 Endowment Summer Stipends have funded more than 3,600 applications. Several of the projects supported by the program have produced prize-winning books, among them Robert N. Watson's Shakespeare and the Hazards of Ambition (best first book accepted by the Harvard University Press) and Edward Muir's Civic Ritual in Renaissance Venice (the American Historical Association's Herbert Baxter Adams Prize). In the last three years, Summer Stipends have been awarded to scholars at 340 different institutions of higher education. Recipients have come from 46 states, the District of Columbia, and Puerto Rico.

The Endowment received 1,430 applications for 1985 Summer Stipends and made 219 awards.

In FY 1986 NEH anticipates awarding up to 233 Summer Stipends at $3,000 each from 1,446 applications.

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For FY 1987 the Endowment expects to receive some 1,450 applications and make approximately 215 awards at $3,500 each.

Summer Stipends guidelines will encourage the submission of applications relating to the Endowment initiatives -- "Understanding America" (including topics related to the study of the U.S. Constitution), "Understanding Other Nations," and the Columbian Quincentenary.

Example of Supported Projects

In 1979 the Endowment awarded a Summer Stipend to Leopold Damrosch, Jr., now a professor of English at the University of Maryland in College Park. Damrosch used the $2,500 award to launch an investigation of the connection between Puritanism and the eighteenth-century English novel. In the book that marked the completion of his project, God's Plot and Man's Stories: Studies in the Fictional Imagination from Milton to Fielding (Chicago, Illinois: The University of Chicago Press, 1985), Damrosch seeks to explain "how particular narratives, at a crucial period in the history of Western culture, both embodied and questioned the religious ideas that their authors and readers held."

3. Travel to Collections ($300,000)

The Travel to Collections Program offers small grants to scholars who must travel to use the research collections of libraries, museums, archives, and other repositories. After reviewing the first two and one-half years of grants made under this new program, the Endowment has determined that the award should be raised in FY 1987 from $500 to $750. Such grants, while still relatively small, can help advance a research project at a critical stage of its development, test the viability of a project at its inception, and increase the scholar's ability to receive additional funds from non-federal sources.

NEH created the Travel to Collections Program to serve scholars whose research is oriented to collections in North America and Western Europe. The program continues to be the only major source of small, short-term travel grants for humanities research in these locations. Some private sector assistance is available from scholarly organizations such as the American Council of Learned Societies and the American Philosophical Society, but these organizations have limited funds and cannot fully meet the needs of scholars by themselves.

For FY 1987, in addition to serving North America and Western Europe, the Travel to Collections Program will also respond to the growing demand from scholars who wish to travel to other destinations by offering support for travel to research collections anywhere in the world. Thus, the Travel to Collections Program will supplement the travel grant programs administered by the International Research and Exchanges Board (IREX), the Social Sciences Research Council (SSRC), and the Committee for Scholarly Communication with the People's Republic of China (CSCPRC), which now support travel for scholars whose work takes them to the Soviet Union, Eastern Europe, Asia, China, Africa, or Latin America. NEH's Travel to Collections Program will, however, be the only program providing small, short-term grants specifically in the humanities for travel to research collections in these areas of the

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world. The other organizations use their limited funds to support scholars who need extensive funding for longer term projects, who have little or no access to other funds, or who need to attend academic conferences overseas (an activity not covered by Travel to Collections).

The high number of applications received for these small grants testifies to the growing interest in national and international research the program has prompted and to the need of humanities scholars for assistance in traveling to important research collections. Equally impressive is the wide range of subject areas and diversity of collections represented in the proposals. Some examples of topics supported include "Ralph Waldo Emerson and William James as Public Philosophers," "The Industrial Revolution in Flanders," "Diaries of Wisconsin Frontierswomen," "The Representation of Jerusalem in Medieval Apocalyptic Illuminations," and "The Russian Expeditionary Force in France, 1916-1918."

Examples of research collections visited by award recipients include the Library of Congress, the National Archives, and the Folger Shakespeare Library in Washington, D.C.; the British Library and the Public Record Office, London; the Bibliotheque Nationale, Paris; the Indiana Art Museum in Bloomington; the Austrian State Archive, Vienna; the Herrick Music Library, Yale University, Connecticut; the Diocesan Archives of Dublin, Ireland; the Hoover Institution, Stanford, California; and numerous city libraries and archives throughout the U.S. and Western Europe.

In FY 1985 the Travel to Collections program received 814 applications and made 416 awards. In FY 1986, the program anticipates about 1,000 applications and 500 awards.

In FY 1987 the program expects to receive 1,400 applications and to make 400 awards of $750 each.

Examples of Supported Projects

(i) In FY 1985 Professor Constance Kuriyama of the Department of English, Texas Tech University, Lubbock, received a grant of $500 for travel to Canterbury, England, to examine records in the cathedral and city archives related to the playwright Christopher Marlowe, Shakespeare's greatest sixteenth-century rival. Marlowe was born in Canterbury, but many of the documents related to his years there have not been used by biographers because of the difficulty of deciphering them. Professor Kuriyama's project will result in a new, more comprehensive biography of Marlowe which takes account of the Canterbury documents.

(ii) In FY 1985, Professor Janice Schimmelman of the Department of Art and Art History, Oakland University, Rochester, Michigan, received a grant of $500 for travel to the Henry Francis duPont Winterthur Museum Library, Delaware, to study the library's large collection of art books published in America through 1965. Professor Schimmelman will eventually publish an annotated bibliography which places these early art books in the framework of art history and criticism by recording the issues that concerned American artists, collectors, and connoisseurs. Her bibliography will also document the growing awareness of art and history in the United States during the first half of the nineteenth century.

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4. Younger Scholars ($400,000)

The Younger Scholars Program provides high school and college students with a unique opportunity to carry out independent research and writing projects during a nine-week period in the summer. Under the supervision of a scholar in the humanities, the students pursue their own research during a concentrated period of time not usually available during the school year. By doing research and producing written work on a specific topic in the humanities, the students gain the valuable experience of independent study and advance their intellectual development.

An evaluation of the first cycle of Younger Scholars grants during FY 1985 provided a resounding endorsement of the program. Some grantees referred to it as a "once-in-a-lifetime" experience which enabled them to pursue serious research in the humanities. Several of the papers written during the first cycle have already been published. Teachers at both the high school and college level have welcomed these opportunities for their students.

As part of its commemoration of the Bicentennial of the U.S. Constitution, in FY 1986 the Endowment established a special nationwide competition for younger scholars to conduct research and writing projects on the Constitution. High school and college students are encouraged to submit proposals on the philosophical, historical, or literary origins of the Constitution; the intent, meaning, and history of the principles of the Constitution; the relation of the structure of the Constitution to American social and intellectual culture; or the connection between self-government and the purposes of human life.

The Younger Scholars Program has achieved wide recognition in the academic community since its inception and has in fact served as a model for other foundations. For example, in 1985 the Dana Foundation granted $150,000 to Furman University, the income from which will be used to fund awards for student research during the summer.

In FY 1985, 174 applications were received and 41 grants were made. For the FY 1986 competition, publicity was improved, and the application deadline was changed. A record 735 applications were subequently received, and the program anticipates making 100 awards. In addition, the special Younger Scholars initiative on the Bicentennial of the U.S. Constitution received 250 applications and will make an estimated 65 awards. Total grants in Younger Scholars for FY 1986 thus will be around 165.

In FY 1987 the Younger Scholars Program will continue the special competition concerning the U.S. Constitution and will also stress the new Endowment initiatives on "Understanding America" and "Understanding Other Nations." About 200 awards will be made in the program in FY 1987 out of an expected, 1,100 applications.

Examples of Supported Projects

(1) In 1985, a high school student from Durham, North Carolina studied the "rags to riches" theme in the novels of Horatio Alger. He read the personal papers of the author as well as the Alger novels and attempted to discover why the main themes of the novels had such a wide popular appeal. This effort included a comparison of Alger's work with contemporary accounts of life in

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nineteenth-century American cities. This student studied why popular audiences were so willing to believe what Alger said when the actual conditions of their daily lives were so different from what he described. Work on this project included research at major archives including the Library of Congress and the Widener Library at Harvard University.

(ii) Also in 1985, a junior at Williams College wrote a detailed study of irony in two of Gustave Flaubert's major works, Madame Bovary and Bouvard et Pecuchet. Written entirely in French, the paper compared and contrasted the various uses and forms of irony as a symbol of the major themes in each novel and ultimately as a reflection of Flaubert's fundamental vision of the world.

5. Seminar Programs

a. Summer Seminars for College Teachers ($3,870,000)

The purpose of Summer Seminars for College Teachers is to provide opportunities for teachers at two-year, four-year, and five-year undergraduate colleges and universities, and for qualified individuals working outside academic institutions, to study with eminent scholars in their own or related fields. Seminars are eight weeks in length and are held at major research institutions. The twelve seminar participants meet regularly with the seminar director and have available the resources of a research library. The participants gain fresh insights into the subjects they teach, improve their capacities to convey their understanding to undergraduate students, and frequently make important contributions to scholarship in their field. In FY 1985 the program received a total of 60 scholarly articles, 20 papers, and eight books that resulted either directly or indirectly from participation in past seminars.

Now in its fourteenth year, the program continues to serve faculty members in undergraduate colleges, especially teachers who are isolated by geography and other circumstances from the mainstream of scholarship. Often, these are teachers who work at small institutions with inadequate research libraries and who have few or no colleagues in their field. Heavy teaching schedules frequently limit their study and research. Given the recent decline in the number of sabbatical leaves and increasing demands on faculty members to teach courses outside their area of scholarly specialization, the intellectual and professional stimulation afforded by the college seminar program continues to be as important to teachers of undergraduate students today as it was when the program began in 1973.

The summer seminars offered in this program are unique in focusing not on pedagogical and curricular concerns but on the content and substance of the humanities disciplines.

The program offered 75 seminars for 863 participants during the summer of 1985. The program is offering 56 seminars for 644 participants during the summer of 1986. The 1986 seminars were selected from 193 applications and represent both the diversity of topics within the humanities and the highest rated applications reviewed by the program.

For FY 1987 it is anticipated that the program will receive approximately 180 applications to direct seminars and will fund 53.

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The high scholarly standards of Summer Seminars for College Teachers are firmly established and well known; maintenance of these standards is the highest priority. Efforts to attract new directors to the program and to offer a slate that reflects the depth and breadth of current scholarship in the humanities will be sustained. Program guidelines will stress and reflect the Endowment's new "Understanding America" and "Understanding Other Nations" initiatives. The stipend for participants will be increased from $3,000 to $3,500 because of higher travel and subsistence costs.

Example of Supported Projects

Professor Marjorie Garber of Harvard University directed a seminar on "Shakespeare and the Problem of Genre." The $63,675 grant provided two-year college teachers from seven states with the opportunity to examine the traditional genre classifications of Shakespeare's plays -- comedy, history, tragedy, and romance -- and to determine the extent to which they are useful in approaching each play's tone and meaning. The seminar was especially designed for, and was open only to, teachers at two-year colleges.

b. Summer Seminars for Secondary School Teachers ($3,640,000)

Summer Seminars for Secondary School Teachers offer teachers faced with large classes, extracurricular responsibilities, and administrative duties an opportunity for close study of significant humanities texts and for the intellectual renewal which derives from working with outstanding scholars and devoted colleagues. Fifty-one seminars were held in 1984, 59 in 1985, and 50 will be held in 1986. Nearly 2,000 teachers have enjoyed intellectual and professional renewal through this program since the pilot seminar offerings in 1983.

The attention brought to this program is far in excess of the numbers served. In recognition of the significance and quality of the work of the seminars, for example, the United States Information Agency is sponsoring a large number of additional foreign participants in 1986. College and university faculty who have led seminars report dramatically renewed commitment to improving the professional climate of secondary school teaching.

In the summer of 1985, 865 secondary school teachers attended 59 seminars covering a wide range of fields in the humanities. In FY 1986, there will be 50 seminars enrolling 750 teachers.

For FY 1987 the program plans to emphasize some currently underrepresented disciplines (Homeric studies, art history, and musicology) and geographic areas (Midwest, South). It will support 55 seminars for 825 teachers. The stipend will be increased by a maximum of $500 depending on the length of the seminars.

Example of Supported Projects

Professor Robert Remini of the University of Illinois at Chicago offered a six-week seminar in the summer of 1985 on "Locke, Madison, and Tocqueville: Evolution of Democracy." The grant totalling $61,105 enabled participants to explore the progress and

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evolution of democracy from the colonial period to the mid-nineteenth century in America by examining selected works of John Locke, James Madison, and Alexis de Tocqueville. Participants discussed the ideology of revolution, the problems involved in structuring a representative government, and the meanings of republicanism and democracy. Participants came from nine different states; ten came from public schools, three from private schools, and one from a parochial school.

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GENERAL PROGRAMS
(Definite Funds in Thousands)

Programs	FY 1985 Actual	FY 1986* Approp.	FY 1987 Request	FY 1986-87 Increase or Decrease (-)
Humanities Projects in Media.....	$ 8,707	$ 8,864	$ 7,000	$(1,864)
Humanities Projects in Museums and Historical Organizations.....	8,965	8,767	5,800	(2,967)
Humanities Projects for Youth.....	663	745	1/	(745)
Public Humanities Projects 2/.....	1,562	1,889	2,000	111
Humanities Projects in Libraries.....	2,773	2,922	1,400	(1,522)
Total	$22,671	$23,187	$16,200	$(6,987)

1/ In FY 1987, the Younger Scholars Program is included in Fellowships, and Youth Projects is discontinued.

2/ Formerly Humanities Projects for Adults.

* Does not reflect the 4.3 percent reduction pursuant to the Balanced Budget and Emergency Deficit Control Act of 1985 (Gramm-Rudman-Hollings Act).

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GENERAL PROGRAMS
($16,200,000)

In the belief that the well-being of a democratic society depends in part upon a shared understanding among its citizens of their cultural and intellectual heritage and upon the vitality of critical discourse in their common life, the Congress has authorized and encouraged the Endowment to foster public understanding and appreciation of the humanities.

The Endowment's programming for the general public is based upon two assumptions: that study of and reflection on the basic ideas and perennial questions addressed by the humanities remain important throughout a person's life and not just during the years of formal education; and that the humanities can be presented to the general public in ways that are both stimulating and substantive.

The Division of General Programs fosters understanding and appreciation of the humanities by transmitting to the public the most significant work in scholarship and learning, by making the best works in thought and culture more generally available, and by engaging citizens in critical analysis and interpretation.

Projects funded in General Programs must focus upon ideas or themes central to the disciplines of the humanities and further public education by:

1. interpreting cultural works;

2. illuminating historical figures and events; or

3. advancing understanding of the disciplines of the humanities.

The projects supported by the division that broaden awareness and deepen public understanding of cultural works include outstanding works of literature such as poetry, drama, fiction, history, essays, philosophy, and biography, and notable achievements in the arts such as painting, sculpture, architecture, and music. Scholarly approaches employed in these projects may come from any humanities discipline.

The division supports projects that critically examine historical figures and events. An understanding of the past can be promoted most obviously through the study of history; but other disciplines of the humanities, each of which has some historical dimension or application, can also provide insights. While the division does not support projects of merely local or antiquarian interest, it does encourage an examination of the deeper significance and broader relevance of local subjects.

The division supports projects that not only transmit a discipline's findings on specific topics but also elucidate the overall character of a particular discipline or set of disciplines. These projects enlighten the public on questions such as: What approaches to inquiry does this discipline characteristically use? What are the competing schools of thought within this discipline? How does this discipline contribute to the understanding of human beings, their works, and their activities?

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In essence, the division supports broad public education in the humanities by funding efforts that establish a bridge between the scholarly world and the public at large. Radio and television programs, interpretive exhibitions, reading and discussion groups, symposia, conferences, and panel discussions are some of the formats used. Museums, libraries, colleges and universities, historical organizations, radio, television, and professional associations are some of the institutions used to provide these educational opportunities for the general public. Education in the humanities for the general public is the end; institutional and individual grant recipients provide the means. The division's four programs reflect these various means: Humanities Projects in Media, Humanities Projects in Museums and Historical Organizations, Humanities Projects in Libraries, and Public Humanities Projects.

Endowment funds are intended to support exemplary projects -- ones that by their excellence serve as models for other institutions. Often projects of such quality prove successful in attracting private support as well. Many institutions and individuals are active in the area of public humanities programming, and the Endowment complements their efforts by encouraging collaboration between universities and other institutions and between scholars and other citizens. By awarding grants selectively to the best projects, the Endowment encourages high standards of intellectual quality, even though NEH provides only a small portion of total support of public humanities programs.

In FY 1987 the division will continue efforts to provide support for exemplary projects of manifest educational value that stimulate and nourish the public's interest in the humanities. Several recent grants illustrate the kind of example that the division seeks to provide. A grant to the American Library Association for "Let's Talk About It," a reading and discussion program in libraries, has engaged thousands of adults in local libraries throughout the nation in discussions with scholars about significant works of literature. These programs have attracted the attention and the financial support of state councils, libraries, and other institutions. The Media program's emphasis upon dramatic adaptations of literary masterworks has resulted in the production of numerous highly acclaimed programs on the Public Broadcasting System and public radio. Many of these have attracted support from foundations and corporations. Through Public Humanities Projects, the division supported the Library of America project to publish and make available to a wide readership outstanding works of American literature. The most recently published editions in this series include the writings of Jefferson, Parkman, Henry James, Emerson, Henry Adams, Poe, and Crane. The Library will ultimately comprise one hundred volumes and is already self-supporting.

The Endowment has been particularly gratified by the quality of the projects that have resulted from its special initiative for children's programming in the Media program. In view of the popular and critical success of this effort, General Programs is now encouraging in all of its programs applications for projects which engage youths in the study of the humanities. Projects for young people of junior high and high school age are particularly welcome. Not only the media of television and radio, but museums, historical societies, and libraries as well have the resources to conduct highly effective humanities projects for young people in non-school settings; and, while Humanities Projects for Youth will

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no longer be a distinct administrative category in FY 1987, the division will work with all of these organizations to help develop exemplary projects for youth. The Younger Scholars component of the Humanities Projects for Youth program has been transferred to the Division of Fellowships and Seminars because these projects are essentially research fellowships.

In FY 1987 the division will also be actively involved in two new Endowment-wide initiatives: "Understanding America" and "Understanding Other Nations." In connection with the "Understanding America" initiative, the division is encouraging proposals on broad, central themes in American history, literature, and culture. Applications are welcome from filmmakers, museums, libraries, and other organizations seeking to rekindle the public's interest in the full sweep of the American experience. For the "Understanding Other Nations" initiative, the division is encouraging museum exhibitions, lectures series, film productions, and a wide range of other projects which will foster an appreciation of the art, literature, and culture of other nations.

Programs of the Division of General Programs

1. Humanities Projects in Media ($7,000,000)

The Media Program supports the creation of television and radio programs designed to convey significant works and ideas in the humanities to a broad public. In grants for planning, scripting, and production, NEH encourages collaboration among noted scholars in the humanities, public television and radio stations, and independent producers. The Endowment works with more than 600 public television and radio stations, 10,000 independent television, film, and radio producers, and a large number of respected scholars. Since the program's inception in FY 1972, the Endowment has supported more than 800 media projects employing all disciplines of the humanities; over 670 hours of television and 500 hours of radio have been produced for national and regional broadcasts to all Americans. Programs funded by the Endowment have received more than 100 national and international awards for distinguished achievement.

A number of other agencies and organizations, such as the Corporation for Public Broadcasting, the National Endowment for the Arts, the National Science Foundation, and the Department of Education offer support for either narrowly mandated or broadly defined purposes related to media. NEH is the sole federal agency concerned with conveying humanities scholarship and resources to the public through radio and television.

During FY 1985, the Media Program reviewed 346 applications and provided support for 69 projects, including planning, scripting, and production. NEH-supported projects provided 61 hours of programming for public television and reached a cumulative audience of approximately 130 million Americans. Several projects received prestigious national and international awards. The New York Times, for example, selected the NEH-supported adaptation of James Baldwin's Go Tell It On the Mountain as the "best American television drama of the year."

It is anticipated that during FY 1986 the program will receive approximately 317 applications and award about 50-55 grants.

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During FY 1987, it is anticipated that approximately 42 grants will be made from a total of about 330 applications. The program will continue to support dramatic and documentary programs on literary works and their authors. Examples of such projects include a feature-length adaptation for television of Saul Bellow's Seize the Day. As a result of support provided during the past year, several major television series will be broadcast on public television stations during 1986. These include a four-hour dramatization of Mark Twain's Huckleberry Finn, a nine-part documentary series entitled The Africans, and a fifteen-week series on the plays of William Shakespeare, entitled The Shakespeare Hour. Several single programs are also scheduled.

The program will also support projects that illuminate important historical ideas, figures, and events. A recent example is Three Sovereigns for Sarah, a three-hour, historically authentic mini-series that dramatically portrays the Salem witch trials of 1692. Filmed on location in and around Salem, Massachusetts, the series focuses on the story of three sisters, distinguished matrons in their community, who were caught in these events and tried as witches. The script is based on court documents, archival resources, the diary of one sister, and the most recent scholarship. In addition to recording a landmark historical event, the drama examines the cultural myths and values of 17th-century society.

The program will continue its emphasis on programs for youth. For example, Out of Time depicts mid-19th-century life in the United States for a television audience of eight to twelve-year old youngsters and their families. Seen through the eyes of two children, this adventure presents a portait of the American historical experience on the Baltimore waterfront during the 1850s.

The program will continue to support projects related to the Bicentennial of the Constitution. Several are in production; others are at the planning and scripting stage, and Dateline 1787, a thirteen-part weekly radio series, is partially finished. Each thirty-minute episode of Dateline 1787 will summarize one week's activities of the Constitutional Convention and provide insights into the personalities at the convention and issues raised and resolved there.

During FY 1987 the program will place greater emphasis upon the production of television documentaries on cultural and historical topics, that is, upon scholarly examinations of significant historical and intellectual figures, events, and works. Examples of such projects supported in recent years include Herman Melville: Damned in Paradise; Heritage: Civilization and the Jews; Voices and Visions, a major series on the work and life of American poets; and Huey Long, a critical study of the life and times of the Louisiana politician. The program will encourage applicants to work closely with private funding sources to generate additional support and will promote agressively the secondary distribution and use of television and radio programs.

Examples of Supported Projects

(1) The Endowment awarded $75,232 to WGBH, Boston, to produce the Spider's Web, 63 half-hour radio programs on masterpieces of American literature. Designed to provide young people with a solid introduction to America's distinguished literary tradition, each

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program is accompanied by a brief commentary on the dramatized work. Among the programs that have been produced are Louisa May Alcott's Little Women, Herman Melville's Billy Budd, Stephen Crane's The Red Badge of Courage, and Henry James' The Turn of the Screw. This award winning series is presently broadcast on 45 public radio stations throughout the nation.

(ii) Endowment awards of $789,887 allowed the ETV Endowment of South Carolina to produce Roanoke, a three-hour, three-part drama based on the story of the Roanoke colony, site of the first prolonged contact between the Elizabethan English and Native Americans. An exemplary project based upon recent scholarship, it seeks to present and interpret an extinct Native American culture using limited, though fascinating, materials, including narrative reports of the English colonists and a handsome set of detailed drawings made of Indian life by John White, governor of the English colony. Because of its superb scholarship, the mystery of its story, and its prominent placement in the PBS schedule, this project promises to be an exceptional means of informing general audiences about significant events in early American history.

2. Museums and Historical Organizations Program ($5,800,000)

Museums and historical organizations are the repositories of collections that reflect our historical and cultural traditions. The Endowment promotes the use of these collections in interpretive projects that emphasize the philosophical, historical, and aesthetic approaches of the humanities. In addition, the Endowment attempts to increase the capacity of these institutions to interpret the humanities through grants for self-study and through projects to enhance the interpretive skills of institutions' professional staff.

The National Endowment for the Arts supports exhibitions, conservation, and documentation of collections that are judged to to be of artistic significance. NEH support is unique in that the applicant must not only make a case for the significance of the works to be exhibited, but also demonstrate that the project will involve a scholarly examination of material culture from the prospective of one or more of the disciplines of the humanities and will result in a worthwhile educational experience for the public.

In FY 1985, the Museums Program reviewed 458 applications and awarded 122 grants. Major exhibitions mounted during the past year include: The Age of Caravaggio: The Baroque Period in 17th Century Italy, a traveling exhibition presented by the Metropolitan Museum of Art; The Great River: Art and Society of the Connecticut Valley from 1635 to 1820, presented by the Wadsworth Athaeneum; and The Eyes of Chief Seattle: Documenting the Lives of Native Americans of Puget Sound, mounted by the Suquamish Tribal Cultural Center of Washington State. Support was also provided for a wide variety of exhibition catalogues and other educational activities.

In FY 1986, the program is expected to award 120 grants out of 450 applications.

In FY 1987, the program will review approximately 450 applications and make about 80 awards. The program will continue to emphasize support for interpretive exhibitions focusing on permanent and temporary collections significant to the humanities.

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Support will continue for projects related to collections management and conservation. These activities include the documentation and computerized control of collections, surveys of conservation needs, and the conservation of objects to be used in temporary and permanent interpretive exhibitions. A recent grant will aid in our historical and social understanding of the decorative arts of six New England houses owned by the Society for the Preservation of New England Antiquities.

The program is aggressively encouraging private sector support. Cultural institutions, recognizing the Endowment's readiness to match private sector support with federal dollars, are expected to continue requesting matching funds and to attract third-party monies.

Examples of Supported Projects

(i) The University of New Mexico received $153,632 to implement two traveling exhibitions that will bring the results of recent archaeological findings and current scholarship about the Pueblo Indians of the southwestern United States to a broad general audience. The exhibitions focus on differences and similarities between prehistoric and modern southwestern Pueblo peoples. The project is exemplary in its selection and development of photographic and interpretive materials and in its use of two different formats that ensure wide public distribution: a major traveling exhibition designed for museums and galleries and a reduced version that can be shown in public libraries, monument visitor centers, and community centers. The exhibition is also accompanied by an illustrated catalogue.

(ii) The Brooklyn Museum in New York received $400,000 to implement a major traveling exhibition, develop a publication, and produce public programs about American art and design from 1920-1940. The exhibition analyzes all aspects of visual culture of this period and seeks to demonstrate that the machine was a defining force in America during the years between the two great wars. The principal areas of focus are the machine as icon, the aesthetics of technology, the uses of power, and machine-made America. Artifacts include fine and decorative arts; consumer and industrial products and appliances; documentary photographs; and blueprints, designs, and models. A comprehensive reassessment of American art and design between the two world wars, this project documents the growth of American influence in world culture during the period and provides a framework for understanding American society.

3. Public Humanities Projects ($2,000,000)

Through this program, the Endowment encourages a wide variety of formats and activities that provide opportunities for the public to cultivate a deeper knowledge and appreciation of the humanities. Imaginative and innovative approaches are especially encouraged. It supports, for example, special initiatives such as those commemorating the Bicentennial of the United States Constitution and the Columbian Quincentenary. The program seeks to have a national impact by funding exemplary projects which could be replicated by other institutions and funding agencies.

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Applicants include colleges and universities, public and private cultural institutions, national professional associations, and a wide variety of community organizations. Applicants are not restricted to any one type of project and may make use of a variety of formats -- including public forums, debates, local radio and television broadcasts, conferences, film festivals, and essays collected in pamphlets, brochures, and program guides. In many cases, grantees are consortia of groups or ad hoc organizations formed to conduct special events.

During FY 1985, the program received 87 applications and awarded 29 grants. The program worked closely with other Endowment programs in support of such major national undertakings as the Festival of India. A grant from this program, for example, enabled the Asian Cultural Council to organize an American tour of Indian scholars in the humanities which helped to ensure that exhibits of Indian sculpture and other art forms were accompanied by lectures and discussions presented by knowledgeable interpreters. Conferences and symposia were organized in twelve states.

In FY 1986, it is anticipated that 100 applications will be submitted and 30-35 grants awarded.

During FY 1987, the program will review approximately 100 applications and make about 35 grants. The program will continue to support major national initiatives and events and will seek model projects which may serve as exemplars for other institutions.

Examples of Supported Projects

(i) This program awarded $150,000 to the Asia Society of New York to develop new programs for public education. In addition to lecture series featuring distinguished scholars, the Asia Society will organize a number of more intensive programs. Recognizing that the out-of-school public also needs exposure to the literature and thought of Asian civilizations, the Asia Society will offer non-credit courses and seminars on a variety of topics. Participants will read classic Japanese and Chinese texts in translation in one series, while other programs will undertake a detailed examination of Asian history and religions.

(ii) The program also continued to support projects that provide a programming model for other institutions and localities. The Arkansas Resource Center received $68,744 in outright funds and $12,500 in matching funds to produce a comprehensive reinterpretation of the role played by black Americans in Arkansas. A thirty-two page interpretive booklet will tie developments in Arkansas to national trends, and the project will mount an interpretive exhibit in Little Rock for the state's sesquicentennial in 1986. Public lectures and a traveling exhibit will also be supported.

4. Humanities Projects in Libraries ($1,400,000)

Libraries collect, preserve, and maintain the written record of the world's cultural heritage and make it available to the general public. In addition to their intrinsic importance as places where the books crucial to study and learning are housed,

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libraries offer a natural setting for scholars and the general public to come together for discussion and critical inquiry. The Endowment seeks to make the best use of that setting by promoting programs that increase public understanding of the humanities through the discovery, interpretation, and greater appreciation of books and other resources in library collections.

There are no other federal nor any non-federal programs that offer support for public education projects in the humanities sponsored by libraries. Federal support for libraries through other agencies, most often through entitlement programs in the Department of Education, emphasizes support for capital expenditures, operating expenses, and book acquisition. State and local governments provide primary operational support. Only NEH offers support for programs which bring together scholars and members of the general public for the thoughtful exploration of library collections in the humanities.

The program has sponsored a wide range of humanities projects through libraries, including reading and discussion programs on significant themes found in literature; conference and lecture series on works by notable writers such as Tennessee Williams, Emily Dickinson, and Martin Luther King, Jr.; interpretive exhibitions of rare books and manuscripts on subjects such as the treasures from the National Library of Spain; and nationwide community forums for the study of constitutional history and contemporary constitutional issues.

During FY 1985, the Libraries program reviewed 62 applications and awarded 33 grants for projects reaching all parts of the nation and focusing upon a variety of topics. These included public lectures on archaeology in Durango, Colorado; reading programs on fictional literature of the American West in Tempe, Arizona; and programs examining the artistic and cultural significance of churches and synagogues in Albany, New York.

During FY 1986, the program is expected to award 35-40 grants out of 68 applications.

In FY 1987, the program will continue to support projects in urban and rural libraries that will bring together scholars and members of the general public to read and discuss literature of many genres and on a variety of themes and topics. The program will review approximately 80 applications and make about 15-20 awards. Through projects in libraries, the Endowment will emphasize programs that explore particular periods of American history and programs that will introduce the literature of other nations to the general public.

Examples of Supported Projects

(1) The Louisiana Library Association in Baton Rouge, with an award of $199,836, is organizing reading and discussion programs in seventy Louisiana parish libraries. Participants read outstanding works of literature under such themes as "The Southern Eye," "In a British Manor," and "Nobel Prize Authors" and participate in discussions with literary scholars. This ambitious program is introducing reading and discussion programs to virtually every parish library in the state.

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(ii) Southwestern College in Winfield, Kansas, with an award of $37,116, is conducting a series of programs on the Victorian era, with particular emphasis on the place of Robert Browning in Victorian letters. The college and the Winfield Public Library will exhibit one of the world's most important collections of materials by and about Browning and his family. Formal lectures and dramatic readings of Browning's poetry will be presented at the public library. Reading and discussion sessions on selected Victorian works will illuminate three Victorian themes: "love and marriage," "war and politics," and "art and the artist."

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RESEARCH PROGRAMS
(Definite Funds in Thousands)

Programs	FY 1985 Actual	FY 1986* Approp.	FY 1987 Request	FY 1986-87 Increase or Decrease (-)
Texts				
Editions	$ 2,714	$ 2,450	$ 2,250	$ (200)
Translations	1,107	1,000	900	(100)
Publication Subvention	326	400	400	--
Reference Materials				
Tools	3,369	2,850	2,750	(100)
Access	4,662 1/	2,500	2,400	(100)
Interpretive Research				
Projects	3,211	2,900	2,800	(100)
Humanities, Science and Technology	695	650	600	(50)
Travel to Collections	206	2/	2/	--
Regrants				
Conferences	347	400	400	--
Centers for Advanced Study	2/	806	755	(51)
International	2,200	2,300	2,300	--
Regrants in Selected Areas	--	145	145	--
Total	$18,837	$16,401	$15,700	$(701)

1/ Includes Preservation and U.S. Newspapers in FY 1985. These activities are included in the Office of Preservation in FY 1986 and FY 1987.
2/ Included in Research in FY 1985; included in Fellowships in FY 1986 and FY 1987.
3/ Included in Fellowships in FY 1985.

* Does not reflect the 4.3 percent reduction pursuant to the Balanced Budget and Emergency Deficit Control Act of 1985 (Gramm-Rudman-Hollings Act).

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RESEARCH PROGRAMS
($15,700,000)

The Division of Research Programs supports research at all stages in the process of producing scholarly works of distinction: activities such as publication, editing, and translating, projects requiring numerous collaborators in complex activities of interpretive research and analysis, the production of research materials for use by scholars in all disciplines of the humanities, and the development of scholarly debate on an international scale. These activities are classified into four broad programs: Texts, Reference Materials, Interpretive Research, and Regrants.

The wide range of research activities supported by the Endowment are linked by the single objective of strengthening the intellectual foundations of the humanities by supporting projects that assist scholars in conducting important and meaningful research. Thus the division, in the context of its reorganization in FY 1986, provides support for the preparation and publication of important texts in the humanities, for the organization of collections and the preparation of reference materials, for the conduct of collaborative or coordinated research, and for the development of research potential through specific regrant programs to centers and professional societies.

The Endowment's Division of Research Programs serves as an important catalyst to the nation's scholarly enterprise by stimulating third-party, non-federal support for projects and scholarly activities. Federal matching funds are offered to institutions and organizations for the support of projects ranging from archaeological excavation to dictionary preparation. Because the private sector is convinced of the integrity and value of the Endowment's review process, non-federal donors often turn to NEH for advice about the quality of applications they receive. In other cases, the Endowment embarks on joint ventures with corporate donors and sometimes individuals with philanthropic interests in sponsoring significant research in the humanities.

All applications are judged by two criteria: 1) the quality and significance of the contribution to scholarship represented in the proposal; and 2) the likelihood that the project will not proceed without some level of Endowment support. The review process includes judgments by scholars within the field of the application and across other fields, thereby offering a rigorous review of all proposals that identifies those excellent and most worthy of support.

The reorganization of the division in FY 1986 strengthens and broadens the support of advanced scholarship through coordinated efforts to promote the study of topics of critical importance. The basic concerns of humanities researchers will continue to be at the center of the division's activities. In FY 1987 every effort will be undertaken to maximize opportunities for collaborative research projects on important subjects not likely to be launched without NEH assistance; for example, for planning and development activities designed to provide a better understanding of the state of a particular field and for major conferences on topics that synthesize the results of work from many quarters.

The programs of the division contribute uniquely to the Endowment's two recent initiatives: "Understanding America" and "Understanding Other Nations." For example, the Editions category

in the Texts Program is encouraging the preparation of both scholarly and popular editions of significant literary works and historical documents. The Translations category is seeking proposals to translate into English the most important philosophical, literary, religious, and historical works of nations of the Near East, Africa, Asia, and Eastern and Western Europe. Moreover, the Interpretive Research program will continue to offer support for scholarly studies which examine broad, central themes in American history, or which shed new light on the history and culture of other nations.

In the Texts Program, the Endowment provides support for the preparation for publication of works that are likely to be used by both specialized scholars and general readers. Such works include definitive editions of the papers of important individuals and collections of documents, translations into English of significant works that originally appeared in other languages, and publication subventions of scholarly books.

The Reference Materials Program is based on the premise that research is often greatly facilitated if materials are better organized, that is, if finding aids and other reference materials are prepared in advance of the scholar's interpretive work. Dictionaries, historical and linguistical atlases, encyclopedias, concordances, data bases, records surveys, and cataloguing of print, film, and sound collections are among the activities supported here.

The Interpretive Research Program, currently the most flexible program of the division, supports significant, original research in all fields of the humanities. In 1985, the book by Robert N. Bellah et al., Habits of the Heart -- Individualism and Commitment in American Life, was published with great critical acclaim. The work is the result of an interdisciplinary and collaborative project supported by this program that studied current American attitudes toward individualism, social obligation, and community through a number of disciplinary perspectives.

In the Regrants Program, funds are awarded to organizations that then regrant these funds according to a plan reflecting a coherent and effective strategy for improving the state of research on a particular subject in the humanities. The International Research category, for example, supports humanities research in a variety of formats in China, the Soviet Union, and Eastern Europe, and also provides support for American scholars conducting research abroad on other parts of the world.

Programs of the Division of Research Programs

1. Texts

The Texts Program provides support for the preparation of editions of historical and literary texts and collections of documents, for the translation into English of foreign language texts and other materials, and for the publication of scholarly books in all of the disciplines of the humanities.

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a. Editions ($2,250,000)

Grants in this category support various stages of the preparation of authoritative and annotated editions of primary sources which address the concerns of current research in the humanities and in many cases the interests of the general reader. Support is provided for projects that make available (either in print or microfilm editions) important texts and documents that have been either previously unavailable or accessible only in seriously flawed editions. The critical introductions and annotations of these editions provide both scholars and general readers with essential information about the form, transmission, and historical and intellectual context of the texts and documents involved. Current awards in the Editions category include the papers of William Penn, Marcus Garvey, Thomas Aquinas, Elizabeth Cady Stanton, Louis Brandeis, Jane Austen, Emma Goldman, George Marshall, George Santayana, and Samuel Johnson.

Although the National Historical Publications and Records Commission also funds editions in the humanities, the Commission's mandate restricts funding to the editing of American historical documents. The Endowment is the only federal agency which supports editions of both American and non-American materials in all fields of the humanities.

Between March 1984 and September 1985, more than forty volumes were published by projects previously funded by the program. A number of these exemplify the program's support of projects of central importance to the humanities. The publication of two volumes in the edition of the works of the American philosopher William James has been described as "the most important, intelligent, scholarly, and philosophically prestigious event of the post-war period in American letters." The edition of Ulysses S. Grant's papers published volumes 13 and 14 on the 100th anniversary of the death of the Civil War general and president. And, the award-winning edition of the papers of Booker T. Washington published its 13th and last volume of documents.

In FY 1985, 118 applications were received by the program; 39 were funded. During FY 1986, 82 proposals are anticipated, of which approximately 34 will be supported.

In FY 1987 the category will continue to support all projects considered excellent; about 90 proposals are anticipated and about 30 will receive awards.

Example of Supported Projects

In FY 1985 the program provided $77,000 to the University of Illinois for continuing work on the edition of the letters of Marcel Proust. The volumes published to date have been described as models of scholarly editing and have made a substantial contribution to our understanding of Proust's work.

b. Translations ($900,000)

Translations supported by the Endowment make significant materials in all fields of the humanities accessible to American

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scholars and general readers. Translations are important to specialists both in their own areas of scholarly pursuit and in related fields.

Translations are equally important as teaching tools, introducing students to the philosophic, literary, religious, legal, and historical traditions of civilizations in the Near and Far East, Africa, Central and South America, and Europe. For undergraduates, literary and source collections in translation have also proved to be highly useful. In this way the category contributes to the Endowment's newly formulated initiative to increase Americans' understanding of the cultural and ethical traditions of other nations. Since 1976, the Endowment has supported translations from 87 languages in all disciplines and fields of the humanities.

In FY 1985, the program received 163 proposals, of which 41 were funded. In FY 1986, the program received 128 applications and expects to make approximately 30 awards.

In FY 1987, the program expects to receive 140 applications and make 25-30 awards.

Example of Supported Projects

In FY 1985 a grant was made to the American Philosophical Society to support the translation of Ancient Greek Commentators on Aristotle. The work will be carried out by more than thirty scholars in North America and Western Europe with each participating country offering financial support. The 8,500-page corpus, written between 200 and 600 A.D., contains more than commentaries on Aristotle: philosophers of the Peripatetic and Neoplatonist schools (e.g., Alexander of Aphrodisias, Plotinus, Boethius) expound their own systems of thought which served as bases for Medieval and Renaissance ideas (St. Thomas Aquinas, Abelard, Ockham, Maimonides). Reaching back in time, the corpus also contains fragments from earliest Greek philosophers, the pre-Socratics, whose ideas on the nature of the material world resemble those held by us today. The project represents the history of over one thousand years of Western intellectual and spiritual development.

c. Publication Subvention ($400,000)

This category makes awards to presses to ensure the dissemination of works of scholarly distinction that, without subvention, could not be published. The category was implemented in 1977 in response to Congressional interest. Applicants must demonstrate both the scholarly significance of the project and a clear need for subsidy. Since its inception, this category of support has assisted the publication of works in all of the disciplines of the humanities.

The National Historical Publications and Records Commission also offers publication subventions but only to nonprofit publishers of American documentary editions that have been supported or endorsed by the Commission.

Many books supported by the program have been awarded major prizes. For example, in 1985 Renaissance Humanism in Papal Rome:

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Humanists and Churchmen on the Eve of the Reformation, by John O'Amico, for which the Johns Hopkins University Press received $5,740, was awarded the Howard R. Marraro Prize in Italian History. The two-volume A Florentine Chansonnier from the Time of Lorenzo the Magnificent, by Howard M. Brown, for which the University of Chicago Press received $16,571, was given the Otto Kinkeldey Award of the American Musicological Society. The Road to Redemption: Southern Politics, 1869-1879, by Michael Perman, for which the University of North Carolina received $2,956, was awarded the first Avery O. Craven Award of the Organization of American Historians. And Shakespeare in Sable: A History of Black Shakespearean Actors, by Errol Hill, for which the University of Massachusetts Press received a grant of $3,595, won the 1984 Barnard Hewitt Award of the American Theatre Association.

In FY 1985, 128 applications were received and 65 grants were made. In FY 1986 about 135 applications are expected and about 66 grants will be made for title subsidy.

In FY 1987 the category hopes to provide support for about 65-70 publications from about 135 applications received. The category anticipates making offers of federal matching funds to at least two presses for the acquisition of computerized type-setting equipment. The purpose of such grants is to increase the effectiveness and efficiency of the presses, thereby reducing their need for title subsidies, and to enable them to accept electronically prepared manuscripts directly from scholars. For example, in FY 1985 a federal matching award was made to the University Press of New England, in the amount of $14,550, for an office-wide network of computers that was not only an excellent choice for this press but appropriate for emulation by others.

Example of Supported Projects

An award of $3,029 was made in FY 1985 to the University of Georgia Press for a book on The Idea of the City in the Age of Shakespeare, an interdisciplinary work that examines Renaissance attitudes toward the city as reflected in the masques, civic pageants, and plays of Shakespeare, Ben Jonson, and Thomas Middleton.

2. Reference Materials

The Endowment's Reference Materials Program provides support for projects that promise to facilitate research in the humanities by organizing essential resources for scholarship and by preparing finding aids and other reference materials that can improve scholarly access to information and collections. Support is available in two categories: Tools and Access. In both categories the Endowment is interested in supporting significant materials that are likely to be used by a wide range of scholars.

a. Tools ($2,750,000)

The purpose of this category is to support the creation of dictionaries, historical or linguistic atlases, encyclopedias, concordances, catalogues raisonnes, linguistic grammars, descriptive catalogues, data bases, and other materials that serve to codify information essential to research in the humanities.

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Two other federal agencies, the National Science Foundation (NSF) and the Department of Education, also provide funding for the preparation of dictionaries or reference grammars. NSF, however, limits its support to works of interest to scientific linguistic research and makes awards for projects in areas such as the biological foundations of language, which fall outside the scope of the Endowment. The Department of Education only supports projects dealing with the development of language teaching materials.

In FY 1985 and FY 1986 several tools supported by NEH were published to wide acclaim. The first volume of the Dictionary of American Regional English was praised in scholarly circles as well as in the popular media for being both a source of invaluable information for linguistic research and of enjoyment to any reader interested in the diversity of American speech. The publication of the first volume of the Sumerian Dictionary also received considerable attention; the dictionary was cited as a project "expected to revolutionize the study of the world's first great civilization, which created the first written language." The Encyclopedia Iranica was considered a fundamental reference work for all aspects of Iranian studies since it encompasses the history and culture of the Iranian-speaking people in the pre-Islamic, Islamic, and the modern periods.

In FY 1985 the Tools category received 125 applications and made 46 grants. The category expects to receive approximately 90 applications in FY 1986 and anticipates making approximately 30-35 awards.

In FY 1987 the number of applications expected is 110; the number of awards anticipated is about 30. The program will continue to support reference works essential for scholarly research that are judged excellent in both concept and execution.

Example of Supported Projects

In FY 1985 a three-year grant of $551,770 in federal matching funds was awarded to Jay Robinson of the University of Michigan to support the preparation of the Middle English Dictionary, a reference work which scholars hail as "the greatest achievement in medieval scholarship in America," and one which has made the U.S. the premier center for medieval studies world-wide. A comprehensive historical dictionary for the period 1100-1500, it marks a signal event for philologists and lexicographers, since during this period our language was transformed from a peripheral branch of the Germanic language family into modern English. The dictionary's practical value extends to those engaged in linguistic and literary studies involving Middle English and is also important for research in every other branch of medieval studies.

b. Access ($2,400,000)

The Access category supports projects which make sources available for advanced research in the humanities. Grants are made for archival inventories and records surveys; the cataloguing of printed works and early manuscripts and graphic, film, sound, and artifact collections; bibliographies and other guides to documentation; foreign microfilming; and the creation and

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organization of oral history collections. Support is also available for projects which address national problems in the library and archival fields. Grants in this category not only open currently inaccessible materials for scholarly use but also develop or implement national standards for description of many kinds of humanities resources.

Two other federal programs offer support for library and archival projects. The National Historical Publications and Records Commission funds projects intended to improve the records management practices of archival organizations and units of state and local governments such as hospitals or city governments. In contrast, Endowment grants are given on the basis of the significance of a particular collection of resources for advanced scholarship in the humanities.

The Office of Libraries and Learning Technologies of the Department of Education provides support for the operations of some 150 research libraries through HEA Title II-C grants. These grants are intended to strengthen the nation's largest research libraries and may support acquisitions, bibliographic control, and preservation. Eligible collections include the sciences and the social sciences as well as the humanities. Moreover, regulations limit applications to the 150 largest libraries, thereby severely restricting the universe of applicant institutions holding significant humanities collections. In contrast, the Access category accepts applications from historical organizations, museums, public libraries, colleges and universities, and private sector organizations maintaining print and non-print collections of significance for humanities scholarship as well as professional societies and individuals preparing bibliographies or guides to resources.

In FY 1985 there were 186 applications and 51 awards. In FY 1986 the category received 147 applications and will make approximately 35 awards. In FY 1987 the number of applications expected is 150; the number of awards will probably be 30-35. The category will continue to support projects which make available material essential for scholarly research and which are judged excellent in both concept and execution.

Example of Supported Projects

The Kansas and Nebraska State Historical Societies have jointly received $115,475 to microfiche their collections of historic photographs. The combined collections form an unsurpassed source of visual documentation for the study of Great Plains history. A noteworthy feature of the project is the cooperative arrangement between these neighboring state agencies, recognizing the broader significance of their resources for American history research. The resulting microfiche set will be available for purchase or through interlibrary loan.

3. Interpretive Research

Interpretive Research supports a wide variety of activities in all fields of the humanities. All grants in this program lead to final products that are original and interpretive in character, rather than works of reference.

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a. Projects ($2,800,000)

This category supports projects which require the coordinated efforts of two or more scholars or of individual scholars working with consultants, research assistants, or clerical and technical support personnel. This category is the most flexible of any in the division and supports a wide range of projects including: biographies, historical and analytical studies in literature and the arts; research in history, philosophy, and other humanities disciplines; interdisciplinary studies; humanities research in political science, sociology, and cultural anthropology; and other major collaborative undertakings that promise to advance research methods or the means of interpretation in the humanities. In this category, the Endowment also supports archaeological projects that promise to strengthen scholarly knowledge and understanding of history and culture.

Other agencies funding archaeological research are the National Science Foundation (NSF) and the Smithsonian Institution. NEH supports projects that study classical Mediterranean and Near Eastern civilizations and the pre-Columbian civilizations of the New World and that emphasize the interpretive study of history, art history, religion, and other aspects of human culture. NSF projects, on the other hand, are based in the social sciences and anthropology and are concerned with the creation of explanatory models of human behavior and the process of change. In the few cases where projects are eligible for support in both the Projects category and at NSF, the staff of each agency cooperates to ensure adequate review of proposals and to prevent duplication of efforts. Support for archaeology provided by the Smithsonian Institution under PL-480 funding is limited to countries for which the U.S. holds excess foreign currency. NEH requires applicants to use such funds whenever possible.

Grants in this category have contributed new knowledge in a wide range of areas. In biography, for example, NEH support has made possible large-scale studies of such figures as Thomas Jefferson, George C. Marshall, Conrad Aiken, Edmund Wilson, and Ernest Hemingway.

The category also makes grants to research centers to support coordinated research programs such as American legal history at the University of Wisconsin, the cultural history of Islam in Africa at Northwestern University, and the history of early modern British political thought at the Folger Shakespeare Library. The category has also begun to support a center at the University of Florida, the Institute for Early Contact Period Studies, one of its foci being the search for and investigation of settlements established by Columbus and other early explorers in the Florida region and the Caribbean. In addition, the category supports a quarterly newsletter produced at the Latin American Institute of the University of New Mexico devoted to the dissemination of scholarly information about the forthcoming Columbian Quincentenary in 1992.

In archaeology, current grants include an award to the University of Rochester in support of the writing of a scholarly volume on the prehispanic urban center, Teotihuacan, in central Mexico; a SUNY-Albany study of early European contact with indigenous tribes in the Mohawk Valley, New York; and at the University of Cincinnati a massive study of a Greek Bronze Age site in the Cyclades.

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In FY 1985 the category received 271 applications and made 57 awards. In FY 1986 the program has received 253 applications and expects to make about 45 awards.

During FY 1987 the category will continue to emphasize significant collaborative research projects in the humanities which promise the most effective use of scholarly resources. Applications will be encouraged in areas of special concern, such as the Bicentennial of the Constitution of the United States and the Quincentenary of Christopher Columbus' voyage of discovery in 1492. In FY 1987 the program expects to receive about 250 applications and to make about 45 awards.

Example of Supported Projects

An award of $60,000 in outright funds and $150,000 in federal matching funds was made to the Colonial Williamsburg Foundation for continued study of urban growth in Williamsburg and Yorktown between 1630 and 1830. The collaborative project will make extensive use of documentary and archaeological evidence and will increase our understanding of the changing relations between town and country before and after the American revolution.

b. Humanities, Science and Technology ($600,000)

In this category, the Endowment supports research that employs the theories and methods of humanities disciplines to study science and technology as well as research that broadens and deepens understanding of the fundamental concerns that lie behind current issues about the conduct and applications of science and technology. This category encourages studies that promote the collaboration of humanities scholars with scientists or engineers, promise to improve interdisciplinary research methods, and are of broad significance to the humanities.

Support is available for collaborative or coordinated research in many areas of inquiry that include, but are not limited to the form, content, and purposes of scientific knowledge; the processes through which scientific knowledge is developed; the invention, innovation, and transfer of technology; the social, moral, and legal meaning of specific scientific and technological innovations; the interaction among science, technology, and other elements of culture; and the methods and concepts that the humanities use to study science and technology. The Endowment supports projects that involve historical and philosophical approaches to the social sciences but does not support empirical social scientific research, specific policy studies, or technical impact assessments.

In FY 1985 this category received 98 applications and made 12 awards. In FY 1986 the category has received 52 applications and will make 10-15 awards.

In FY 1987 the Humanities, Science and Technology category will emphasize the collaboration of humanities scholars with scientists in research on topics of significance to the humanities. In FY 1987 the category anticipates receiving 80 applications and making about 10 awards.

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Example of Supported Projects

An award of $150,000 in outright funds and an offer of $75,000 in federal matching funds to the Massachusetts Institute of Technology will enable a group of researchers, including historians of science, scholars of Soviet studies, and political scientists to establish a humanities research center for the coordinated study of the development of science and technology in the Soviet Union. During a period of three years the group will produce a series of monographs, including an interpretive history of science since 1860 and a study of the social and political dimensions of science and technology in the U.S.S.R.

4. Regrants

This program supports research through awards made to major humanities organizations that then support individuals conducting research in the humanities in the United States and in selected areas abroad. Other regrants provide support for collaborative research projects, research planning and development, and major conferences involving American and foreign scholars.

Awards are made to colleges and universities, learned societies, federations and committees of scholarly associations, and major independent research libraries and centers. Through regrants to individuals, these institutions and organizations provide both short-term and long-term support. NEH awards in this program are usually in the form of federal matching awards.

a. Conferences ($400,000)

Grants in this category support conferences that enable scholars to advance the current state of research on topics of major importance in the humanities. Through a carefully structured set of presentations and discussions for a wider audience, both in person and through publications, the Conferences category provides a dynamic avenue for furthering scholarly research in the humanities.

In FY 1985 the category received 140 applications and made 35 grants. In FY 1986 the category expects to receive about 140 applications and make about 30 awards.

In FY 1987 procedures for assessing the results of NEH conferences will continue to be implemented and evaluated, and increased emphasis will be placed on stimulating more broadly-based conferences with major disciplinary impacts. In FY 1987 the category expects to receive about 145 applications and make 25-30 awards.

Example of Supported Projects

An award of $8,500 in outright funds and $7,016 in federal matching funds was made to Louisiana State University to conduct a three-day conference titled "Southern Letters and Modern Literature." Taking place on the 50th anniversary of the founding of the Southern Review, the conference included writers such as Eudora Welty and Walker Percy, and critics such as Cleanth Brooks

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and Houston Baker. Through both individual presentations and panels, the conference critically examined the problems of contemporary southern writers and their relationships with modern American literature in general.

b. Centers for Advanced Study ($755,000)

Through grants in this category, the Endowment supports groups of scholars who engage in coordinated research in significant areas of the humanities at centers for advanced research, independent research libraries, American research centers abroad, and research museums. The regrants awarded by the centers enable individual scholars to pursue their own research for periods ranging from six to twelve months and to engage in an interchange with the center's other scholars. Centers receive applications directly from interested scholars and select their own fellows following NEH guidelines.

Among the books published in FY 1985 by scholars who had done research or writing as NEH fellows at centers was Omnipotence, Covenant, and Order: An Excursion in the History of Ideas from Abelard to Leibniz (Ithaca, New York: Cornell University Press, 1984) by Francis Oakley, now President of Williams College, who did his work at the Institute for Advanced Study in Princeton, New Jersey.

Also in FY 1985, two new centers received funds from NEH for their fellowship programs: the Folger Shakespeare Library in Washington, D.C. and the John Carter Brown Library in Providence, R.I. Reviewers of the Folger proposal praised the library for its renewed emphasis on the use of its scholarly resources and facilities for the study of Renaissance history and literature; one site visitor characterized them as superb and unmatchable. Reviewers of the John Carter Brown Library application stressed the uniqueness of the resources of the library for the study of the early exploration of the Americas.

In FY 1985 the Endowment received 15 applications and made 12 grants. In FY 1986 the Endowment expects to receive approximately 18-20 applications and to fund at least 10 centers.

The Endowment will continue in FY 1987 to concentrate its support on centers with unique resources and research programs of high quality and also to encourage centers to search for private sources of aid. About 20 applications are anticipated; at least half will be funded.

Example of Supported Projects

In FY 1985 the Endowment supplemented the funds available to the American Research Center in Egypt (ARCE) for 1986-87 fellowships with a grant of $49,000. In so doing NEH acknowledged ARCE's vital role in American scholarship in Egypt. The center, located in Cairo, supports archaeological projects conducted by research teams under the direction of senior American scholars, maintains a fellowship program that enables American scholars to conduct research in all periods and phases of Egyptian civilization, and supports special historical and literary projects in Egypt in archaeology and art history, Islamic studies, and other humanities fields.

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c. Regrants for International Research ($2,300,000)

Through this category, the Endowment awards funds to national organizations and learned societies to enable American scholars to pursue research abroad, attend or participate in international conferences, and engage in collaborative work with foreign colleagues. The regranting organizations also sponsor international scholarly exchange and collaborative international research endeavors.

Grants in this category currently support the following activities: the International Travel Grant Program for American Scholars administered by the American Council of Learned Societies (ACLS); the International Research Awards Program of the Social Science Research Council (SSRC), which supports research on the humanities by American scholars in Africa, the Near and Middle East, Asia, South America, and Europe; the International Research and Exchanges Board (IREX), which administers scholarly exchanges and collaborative research projects with the Soviet Union and the countries of Eastern Europe; two programs of the Committee on Scholarly Communication with the People's Republic of China (CSCPRC), whose activities are analogous to those of IREX; the ACLS/SSRC Joint Committee on Chinese Studies, which supports collaborative and individual research on China outside the People's Republic of China; and the Universities Service Centre in Hong Kong, which, in association with ACLS, provides office space and extensive library facilities for scholars pursuing research on China.

This category fosters understanding by Americans of the history, culture, and traditions of other nations. Through the regrants administered by these national organizations and learned societies, American scholars are provided an avenue for pursuing their research abroad and for engaging in collaborative work with foreign colleagues.

While there are other federal and private foundation programs that provide scholarly support for international collaborative research and scholarly exchange (e.g., Fulbright awards and Title VIII Soviet-East European Research and Training Act of 1983 awards by USIA), the Endowment's activities focus exclusively on the humanities and do not overlap with programs that are available elsewhere.

In FY 1985 the category received seven applications and made seven awards. In FY 1986 and FY 1987, the Endowment expects to continue to support these seven existing activities.

Example of Supported Projects

An award of $500,000 to the International Research and Exchange Board (IREX) for a number of advanced research exchanges among humanities scholars from the U.S. and Eastern Europe includes support for a working conference on "Russian-American Literary Relations." This conference, conducted in working groups, is examining the correspondence between Mark Twain and Russian writers and the correspondence of Leo Tolstoy with American writers.

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d. Regrants in Selected Areas ($145,000)

In this category, the Endowment supports three kinds of regrants offered by the American Council of Learned Societies: ACLS fellowships, which provide opportunities for fellows to engage in research for periods ranging from six to twelve months; Grants-in-Aid, which provide amounts under $3,000 to advance specific research projects in progress by defraying essential research expenses; and Research Fellowships for Recent Recipients of the Ph.D. Over eighty percent of the NEH support for these programs is in the form of grants matched by gifts from private foundations. The three programs, therefore, provide valuable diversity of opportunity for humanities scholars while encouraging substantial private financial support for work in the humanities.

In FY 1985 the category received three applications and made three awards. In FY 1986 and in FY 1987, the Endowment anticipates continued support for the three ACLS regrant programs.

Example of Supported Projects

Since 1971, ACLS has annually made 100 Grants-in-Aid awards (average stipend, $2,500); these awards are supported in part by the Endowment and by a gift to ACLS from the J.D. and C.T. MacArthur Foundation. In FY 1985 the ACLS Fellowship program funded a diverse range of projects, including "Changing Ideas of War and Peace in the 1930's," "Studies in the Philosophical Foundations of 17th Century Science: Descartes and Leibnitz," and a biography of James Redpath. NEH has also participated with the Carnegie Corporation and the Rockefeller Foundation in the ACLS program of Research Fellowships for Recent Recipients of the Ph.D. Degree which supports significant post-doctoral research in the humanities; 35-40 awards are made annually.

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STATE PROGRAMS
(Definite Funds in Thousands)

Program	FY 1985 Actual	FY 1986* Approp.	FY 1987 Request	FY 1986-87 Increase or Decrease (-)
State Programs	$21,413	$21,086	$16,630	$(4,456)

* Does not reflect the 4.3 percent reduction pursuant to the Balanced Budget and Emergency Deficit Control Act of 1985 (Gramm-Rudman-Hollings Act).

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STATE PROGRAMS
($16,630,000)

State humanities councils, mandated in the National Foundation on the Arts and the Humanities Act, operate in each of the fifty states, the District of Columbia, Puerto Rico, and the U.S. Virgin Islands. The central purpose of the state councils, and a basic aim of the Endowment itself, is to foster public understanding and appreciation of the humanities. Grants from the Endowment are made to the state humanities councils, which then undertake to develop and support locally initiated humanities programs for the general public in history, literature, philosophy, and the other disciplines of the humanities. Because state councils may support no more than half the cost of projects, every federal dollar provided by state councils is matched by local contributions of cash, goods, and services.

Endowment support for state councils is based on the premise that the well-being of a democratic society depends upon its citizens' continued learning about the history and culture of the United States as well as the languages, history, and cultures of other nations. Public programs in the humanities, designed primarily for out-of-school adults, contribute to the public's understanding of our national heritage and the relationship between our culture and the cultures of other nations.

On the 200th anniversary of the United States Constitution, it is fitting that renewed attention be focused on what Americans need to know as citizens and on the proper relationship among scholar, citizen, and society. In keeping with the view, expressed by Thomas Jefferson among others, that formal schooling is only the beginning of the education process, the Endowment, through its support of the state councils, seeks to make focused and coherent humanities education possible in places and by methods that are appropriate for adults. State councils support humanities projects in a wide variety of settings: museums, libraries, and college campuses; city parks and community centers; Indian reservations; traveling Chautauqua-style tents; and church and grange halls. Increasingly the state councils are encouraging and supporting wide public discussion of the place of the humanities in pre-college education.

Although state council projects focus on diverse topics, themes, and disciplines, they typically have the following elements in common:

-- The content of the project is centered in one or more of the humanities disciplines cited in the Endowment's authorizing legislation.

-- Each project is focused on a topic, idea, or text, which is analyzed and discussed using the methodology of the humanities.

-- The methods of the humanities -- critical thinking and interpretation -- are evident throughout the program. Scholars are actively involved in the project, drawing upon their analytical, interpretive, and pedagogical skills.

-- Scholars and the general public are involved in disciplined dialogue of benefit to both.

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Each state program is governed by a volunteer council composed of twenty or more private citizens -- both scholars in the humanities and persons drawn from non-academic segments of the state's population, such as members of the professions, the business community, and civic organizations. Each year, more than 1,100 private individuals volunteer as members of state humanities councils. The program is an effort in decentralized grant-making. Within the bounds established by statute, each council is empowered to determine its own objectives, decide the emphasis of its own program, and design and conduct its own grant competition.

Each council submits biennially a proposal which analyzes the role of the humanities council within the state, assesses its program for the past two years, and presents its goals, objectives, and plans for the ensuing two-year period. This application -- which is evaluated by outside reviewers, panelists, and NEH staff -- is the basis for National Council recommendations to the chairman regarding further support. After a council is awarded a grant by NEH, it then regrants the funds to individuals, organizations, and groups through a competitive review process. In addition, each council submits a plan for approval by the NEH chairman which indicates compliance with the public accountability provisions of the enabling legislation.

According to the Endowment's enabling legislation, state governments have the option at any time of either designating the existing council as a state agency and matching a portion of the funds provided by NEH, or appointing up to six members to the existing council. Although only one council may be supported by NEH in any state, the opportunity to constitute a state council and to petition the Endowment for recognition is available to any group of citizens in any state.

Over the past three years, in response to encouragement from NEH, state councils have adopted a more active role within their states. While they continue to remain open to the local initiatives of community-based groups, organizations, and cultural institutions, they now supplement such essentially reactive programming by planning and soliciting applications for specific humanities projects. This active leadership helps ensure that high quality programs are available to audiences in communities of every size and description throughout the state.

The Endowment gives strong encouragement to these developments. Through a special competition, the Endowment supports outstanding project ideas developed by the state councils that may serve as models for humanities programming within the state and for other state councils. In addition, NEH convenes meetings of the chairs of the state councils to assist them in providing effective leadership for their councils; and at regular intervals the agency holds orientation conferences for new state council members to ensure that they are aware of their new responsibilities. These meetings and conferences enable the Endowment to bring programmatic and policy issues to the attention of the state council members and to provide opportunities to present examples of excellent projects and programs that could be adapted by other state councils.

The councils are assisting institutions, organizations, and community groups to develop humanities programs which forge ties among institutions and bring together the resources most needed for successful humanities programming. The resurgence of interest by the public in library reading and discussion programs has been

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actively encouraged by state councils through the support of more than 140 such programs over a two-year period. For example, the Alabama council has drawn leading scholars of literature, philosophy, and history together with the staff of Alabama's libraries, museums, and historical societies to create a reading and discussion series exploring ways that utopian themes can illuminate key issues in American intellectual history. The programs are focused on several major texts, including: John Winthrop's Modell of Christian Charity, Thomas Jefferson's Notes on the State of Virginia, Nathaniel Hawthorne's Blithedale Romance, and I'll Take My Stand by the Agrarians. A lecture by a leading historian of the south will introduce the series and a major exhibition on the 19th century utopian community of Fairnope, Alabama, will tour the libraries that are host to the programs.

Recognizing that education in the humanities requires sustained effort, the councils are encouraging series of related programs. The Virginia foundation is conducting a series of programs to commemorate the bicentennial of Thomas Jefferson's Virginia Statute for Religious Freedom. The principles articulated in the statute became the basis for the guarantees of religious freedom found in the First Amendment and framed the debate about intellectual freedom in America. As a result of the council initiative, a major conference took place in September 1985, to be followed by a series of thirty lecture-discussion programs in all regions of the state, a public symposium, and the publication of scholarly essays.

The Endowment's initiative on the Bicentennial of the U.S. Constitution has inspired a wide range of council-conducted activities, in some cases tied to the state's role in the constitutional era. These projects have been funded in various regions of the country and are expected to increase steadily in number through 1987. They examine the historical, philosophical, and political values of the nation at its inception, the past and present role of the judiciary in interpreting constitutional principles, and the meaning of the Constitution in the 1980s. For example, as the first part of its three-year program on the Bicentennial of the U. S. Constitution, the Pennsylvania council in 1985 supported thirty study groups on the Constitution at state libraries and member organizations of the Pennsylvania Federation of Historical Societies. Conducted by professors of history, government, political science, and jurisprudence, the study groups met for six sessions, using as a text an anthology of readings prepared specifically for the groups by constitutional scholars. Some topics covered included, "The Philosophical and Historical Origins of the Constitution," "The Constitutional Convention: Philadelphia, May-December 1787," and "The Current Constitutional Issues and the Future of the Constitution."

On the occasion of the 150th anniversary of the independence of Texas from Mexico, the Texas council is conducting a three-part program focusing on that state's Mexican heritage. The program will begin with major presentations at the Texas State Historical Association's annual meeting, exploring the historical roots of the Mexican cultural legacy. The annual lecture and symposium sponsored by the Texas council will focus on the contemporary manifestations of the legacy, examining questions of language and migration. The publication of essays from these programs will provide an important resource for the people of Texas.

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Based on the conviction that they have an active role to play serving as a bridge between institutions of higher education and secondary schools in their states, state councils are working cooperatively with the state boards of education, school boards, school administrators, and school principals. For example, the Maine council is sponsoring a statewide series of humanities seminars designed to satisfy teacher recertification and staff development requirements. The seminars will focus on the rigorous study of significant humanities texts, rather than on teaching methods, and are being offered at a time when the Maine legislature is reassessing what should constitute teacher recertification.

The state councils have supported many excellent films designed for public audiences as well as for use in the schools. Recent examples include: Alabama's Lost in Time, a sixty-minute film with an accompanying study guide tracing the story of Alabama's pre-historic inhabitants up to the arrival of the Spanish explorers in 1540; the film Hard Winter sponsored by the New Jersey council in conjunction with the Morris County Historical Society, which depicts the role of Morristown during the winter of 1779-80 when General Washington and 10,000 of his troops were stationed there; One-third of a Nation, a film funded by the South Carolina council which concerns the Great Depression in the American south; and the Puerto Rico council's documentary about the life and contribution of the noted scholar Arthur Schomburg (1874-1930) to the study of Afro-American history and culture in the United States, Puerto Rico, and the Caribbean. The documentary, The Stone Carvers, supported in part by the District of Columbia Community Humanities Council, received an Academy Award in the short documentary category in 1985.

Speakers' bureaus and traveling exhibitions enable state councils to make available humanities programs of high quality in less accessible regions of their state. In addition, councils are working to sustain the effects of successful programs by reusing, through their resource centers, projects of proven high quality, such as films and other media presentations, interpretive exhibitions, publications, and study guides.

Since the establishment of the program, regrant activities have been co-sponsored by more than 1,200 colleges and universities, 1,000 libraries, 1,000 museums, and a wide range of agencies of state government, community organizations, and other cultural institutions.

In FY 1985 the state councils supported 4,006 regrants; in FY 1986, the state councils expect to support over 3,900 regrants.

During 1987 the Endowment will continue to articulate and apply vigorous standards in order to assist state councils in improving the quality of their programs. The Endowment will identify and disseminate exemplary projects funded by state councils, and it will continue a special competition for model projects developed by state councils. In addition, NEH will conduct orientation conferences for new members of state councils and regular meetings of state council chairs. Information on various programming formats and standards will be distributed to all state councils. Finally, the Endowment will support a colloquium which will examine issues related to public humanities programs in the United States. Through such efforts we hope to improve further the caliber of the work of state councils and to achieve more lasting results at the state and national levels.

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OFFICE OF PRESERVATION
(Definite Funds in Thousands)

Program	FY 1985 Actual	FY 1986* Approp.	FY 1987 Request	FY 1986-87 Increase or Decrease (-)
Office of Preservation	--	$3,976	$4,000	$24

* Does not reflect the 4.3 percent reduction pursuant to the Balanced Budget and Emergency Deficit Control Act of 1985 (Gramm-Rudman-Hollings Act).

OFFICE OF PRESERVATION
($4,000,000)

The Endowment has been making awards for preservation activities since 1979 through funding categories in the Division of Research Programs. During the past six years the Endowment has supported projects to train curators in preservation techniques, to survey the extent of the deterioration of scholarly resources, to support cooperative and selective microfilming efforts, and to effect improvements in preservation technology. In January of 1985 the Endowment announced a new initiative in this arena and established a separate Office of Preservation.

This office provides national leadership in addressing the problem of the disintegration of major humanities materials, particularly books. According to estimates made by the National Conservation Advisory Council, one-third to one-half of the documentation in American libraries has seriously deteriorated because it was printed or written on paper with a high acid content, has not been housed under proper climate-controlled conditions, or has been bound or enclosed in materials which cause paper to disintegrate. Other media -- graphics, film, video, sound, -- are subject to a variety of problems in creation, storage, and use that limit their life expectancy. Much of this endangered documentation is important to present and future work in the humanities. The Endowment's priority in this program is to support projects to preserve materials relating to the cultural, intellectual, and literary history of the United States.

An example of Endowment leadership in this area is staff involvement in the planning of a documentary film to inform professionals and the general public of preservation issues. NEH staff are working with colleagues at the Library of Congress and the Council on Library Resources (CLR) on this $500,000 project. The Endowment's grant of $150,000 to the CLR is being matched by an equal amount from the Mellon Foundation, and the Exxon Education Foundation will cover the balance. The film is designed for general audiences and is intended for showing over the PBS network; segments of it will be available later for classroom and fund-raising purposes. There have been slide-tapes on preservation prepared for professional training purposes in the past, but this film will be the first documentary on preservation designed for general viewing.

The Endowment believes it will succeed in addressing national preservation problems through fostering cooperative endeavors among librarians, archivists, and researchers because of our experience with the U.S. Newspaper Program. Thus far, twenty-six states and territories have been involved in this program, which also enjoys the cooperation of the Library of Congress and eight other major newspaper repositories in the country. The program's objective is to establish a central bibliographic record of the estimated 300,000 American newspaper titles and to make microfilm copies of those most useful to American historians. The program has already brought over 40,000 titles into a national data base accessible at more than 6,000 computer terminals in libraries all over the country. In FY 1985 twelve grants were awarded for a total of $1.32 million; this included four planning grants for states and territories joining the program, five grants to complete bibliographic work in five national newspaper repositories, and three grants to begin cataloging in states that had successfully

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completed planning. Publication of an eight-volume, national union list of U.S. newspapers in June of 1985 represents a major milestone in this long-term project.

Experts in the preservation field generally agree that microfilming is still the best means of preserving large quantities of brittle books and serials. Another preservation method, optical disc technology, is not universally available; and the discs themselves cannot be guaranteed to last more than ten years. It is important now to increase the productivity of selective microfilming and to guarantee national access to materials that have been preserved. At present only 50,000 volumes are being filmed annually. Individual institutions are doing much of this work but, in many cases, the information about the filming is not being distributed through a national data base. Information about national efforts of this kind is being gathered by the Council on Library Resources, however, which has formed a Committee on Preservation and Access.

Since twenty years of microfilming at the rate of 200,000 volumes annually would save 4 million of the 75 million books presently estimated to be at risk, it is obvious that selection is a vitally important step in this process. So far three approaches to this difficult problem have evolved: (1) user-demand at individual institutions alerts librarians to the condition of particular volumes, which may then be cued for microfilming; (2) research collections of unique and established importance to scholarship may be microfilmed selectively according to common general priorities -- this is the approach employed in the cooperative microfilming project administered by the Research Libraries Group at nine leading research libraries and funded by the Endowment and the Mellon foundation; and (3) scholars in a particular discipline could review bibliographies and determine what has highest priority for preservation -- an Endowment grant to the American Philological Association is currently supporting a project of this type for books in the field of classics.

There are two other federal programs which offer support for this kind of preservation work. The Department of Education, under title II (C) of the Higher Education Act, makes awards to major research libraries; in FY 1984 approximately $1.4 million was expended for preservation work at individual institutions. Since the Endowment's emphasis is on cooperative projects, national or regional, there is very little overlap here. The National Historical Publications and Records Commission (NHPRC) offers support for preservation work in state archives, where much of the documentation includes government records of interest to public policy research but of minimal concern to scholars in the humanities.

In FY 1986, 63 applications have been received, of which about 20 are expected to be funded. At the FY 1987 request level, the Endowment would be able to make 18 awards from a total of 70 applications.

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CHALLENGE GRANTS
(Indefinite Funds in Thousands)

	FY 1985 Actual	FY 1986* Approp.	FY 1987 Request	FY 1986-87 Increase or Decrease (-)
Challenge grants.....	$19,600	$16,898	$16,500	$(398)

1371

* Does not reflect the 4.3 percent reduction pursuant to the Balanced Budget and Emergency Deficit Control Act of 1985 (Gramm-Rudman-Hollings Act).

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CHALLENGE GRANTS
($16,500,000)

The preamble to the National Foundation on the Arts and the Humanities Act (NFAH Act) declares "that the encouragement and support of national progress and scholarship in the humanities and the arts, while primarily a matter for private and local initiative, is also an appropriate matter of concern to the Federal Government." In the 1976 amendments to the NFAH Act, the Endowment was authorized to provide means for humanities organizations and institutions to increase their levels and kinds of continuing financial support, improve their administration and management through long-range financial planning, encourage greater audience participation in their programs, and develop greater cooperation with other such institutions. As a result, the Endowment developed its Challenge Grants Program, which uses federal funds to stimulate non-federal support for the humanities and to help humanities institutions and organizations improve their financial stability and program quality. Financial support for these institutions is provided -- as it should be -- primarily by individual contributors, private philanthropy, local and state governments, and users. The Challenge Grants Program encourages long-range institutional planning and provides initiative for recipients to develop long-term private support.

Challenge Grants help foster high quality teaching, learning, and research within the humanities by assisting institutions in developing or expanding their permanent capital base and by encouraging them to cultivate the broadest possible range of public and private interest and financial support. The awards challenge cultural organizations and institutions to present their case for support to a diverse contributing public. The federal investment helps grantees attract funds, yet it alone provides no more than twenty-five percent of the increased funding that results from a Challenge Grant since grantees are required to raise three dollars for every dollar the Endowment awards. The financial stability and growth of the institutions remain dependent upon their cultivation of varied sources of public and private support.

The Challenge Grants Program is an important element in the Endowment's overall efforts to sustain and increase non-federal support for the humanities. Its continuing success is largely attributable to the respect that exists within the philanthropic community for the quality of the Endowment's review process. The national recognition for meritorious work in the humanities afforded by a Challenge Grant assists recipient institutions in attracting these non-federal funding sources. Furthermore, individual donors and contributors are often more receptive to funding appeals when they know that their contribution will be increased by matching funds.

Challenge Grant recipients may use both federal and non-federal funds to establish or increase working endowments; undertake capital improvements and renovations; acquire materials, collections, and equipment; maintain, preserve, and restore collections; improve their management and administration; underwrite broad and continuing operational needs; and provide personnel development.

The application process itself entails long-range planning and the galvanizing of fund-raising resources. All Challenge Grant

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recipients must demonstrate in their applications that, within the context of their missions and constituencies, challenge funds will help them sustain or achieve a high level of quality in programs and activities within the humanities. Both the federal and non-federal funds must have a projected long-term impact, therefore, upon the quality of the applicants' programs, resources, and services. Applicants must demonstrate financial and program needs in light of their experience, objectives, and priorities; and in so doing they must reflect effective long-range planning for programs, finances, and management. Finally, applicants must present feasible and promising plans for raising non-federal matching funds.

Most Challenge Grant offers extend over three fiscal years. The non-federal funds must come from either new sources or increased contributions by existing donors. The Endowment encourages fund-raising plans which will target and stimulate donors likely to continue contributing beyond the formal federal grant period.

Since the inception of the program in 1977, the Endowment has offered awards to 833 applicants: 367 colleges and universities, 248 museums and historical societies, 72 research libraries and advanced study centers, 48 public libraries, 14 university presses, 43 public media stations and organizations, and 41 national and local cultural and professional organizations.

Both the concept and the mechanism of Challenge Grants have proven highly successful. In return for $196.6 million in federal Challenge funds awarded since 1977, Challenge Grant recipients will raise considerably more than the $589.8 million in new or increased giving from non-federal sources required by the 3:1 matching provision of the grants.

Furthermore, Challenge Grant recipients report that substantially increased income and continued giving extend well after the close of the federal grant. For example, Mount Holyoke College reported that a Challenge Grant had enabled it to increase the amount raised through its annual fund drive by 66 percent, from $1,347,000 in the year preceding the Challenge Grant period to $2,235,000 in the year the grant was completed. In addition, response to the Challenge Grant from a large number of new donors enabled the College to identify a number of important potential donors for future fund-raising efforts.

Institutions have also discovered that a Challenge Grant proves to be a magnet for funds to support needs which do not normally attract support from private funding sources. For example, the Lincoln City Library (Nebraska) has used its Challenge Grant to help raise funds that the city was unable to provide for enhancing the collections and programs of its Heritage Room, which houses special collections in Nebraska history and literature and serves as a focal point for the Library's programs for adults. Awareness of the resources and activities of the Heritage Room has increased, and the public has become more supportive of the Library's needs.

The Challenge Grants Program will continue to be open to applications from institutions and organizations that received an Endowment Challenge Grant in the past and can justify a second award. However, at least two full years must elapse between the

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close of the first grant and application for the second in order to provide time to assess the long-term impact of the first award. In addition, applications for second awards are held to an even higher standard than applications for first awards, so that only truly exceptional applicants receive second awards. In FY 1985, 46 new awards were made, 11 of which went to previous recipients.

The only other federal agency offering challenge grants similar to those provided by NEH is the National Endowment for the Arts. Some institutions -- particularly colleges, universities, and museums -- have programs in both the arts and the humanities. Thus, to prevent the overlap of federal funding, to ensure distinctions between grant purposes, and to prevent the dilution of development efforts at recipient institutions, the agencies have jointly adopted a policy which precludes any institution or organization from simultaneously receiving Challenge funding from both agencies.

The Department of Education offers an Endowment Grants Program, under Title III of the Higher Education Act, which differs considerably from the Endowment's Challenge Grants Program. Through their program, the Department provides one federal dollar to institutions which have already raised one dollar from non-federal sources. The purposes and eligibility requirements of the Education Department's program make the likelihood of overlap with NEH minimal. Nonetheless, to ensure that duplicative funding does not occur, NEH staff regularly exchanges current grant information with the Department of Education.

Of the 833 cultural institutions and organizations awarded NEH Challenge Grants, 97 percent have succeeded in raising at least three times the amount offered in new or increased gifts from non-federal sources. Only 26 of the 833 recipients have so far failed to raise the full amount required, and most of these have raised nearly the full amount.

The Challenge Grants Program received 223 applications for FY 1985 and made 46 awards; it received 249 applications and made 42 awards in FY 1986. The Challenge Grants Program's first priority for FY 1987 is to honor offers made in prior years. The second priority is to award new grants to those applicants whose proposals are deemed excellent by evaluators, especially to those who have not previously received a Challenge Grant award. In FY 1987, 270 applications are anticipated and approximately 40 awards would be made. The Endowment also plans to continue the practice begun in FY 1986 of using Challenge funds, rather than definite or treasury funds, to support the New York Public Library in its long-term efforts to raise the levels of support from city, state, and private sources for its nationally important research libraries.

Examples of Supported Projects

(i) In FY 1985, Oregon State University received a Challenge Grant of $700,000, which in combination with non-federal gifts of $2.1 million, will establish and endow a center for the humanities. The endowment will enable the center to support humanities faculty research and professional development, coordinate conferences and other special activities in the humanities, and develop humanities programs for the general public.

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(ii) In FY 1985, an NEH Challenge Grant of $415,000 was awarded to the Museum of Northern Arizona in Flagstaff. This grant plus non-federal gifts of $1,245,000 will be used to create an endowment to support: basic research in cultural anthropology and archaeology of the Colorado plateau; improved curation of anthropological collections, native American arts collections, and the museum's archives; and increased outreach to isolated areas of Northern Arizona.

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TREASURY FUNDS
(Indefinite Funds in Thousands)

	FY 1985 Actual	FY 1986* Approp.	FY 1987 Request	FY 1986-87 Increase or Decrease (-)
Treasury funds.....	$10,780	$11,590	$12,500	$910

1876

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* Does not reflect the 4.3 percent reduction pursuant to the Balanced Budget and Emergency Deficit Control Act of 1985 (Gramm-Rudman-Hollings Act).

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TREASURY FUNDS
($12,500,000)

The Endowment uses treasury funds to match contributions from non-federal cources to individual humanities projects. Together with Challenge Grants, these funds are the principal means the Endowment uses to increase the role of businesses, foundations, and private citizens in support of the humanities. This objective is central to Administration and Endowment policy.

Since the agency was established in 1966, Endowment matching grants have stimulated over $163 million in third-party money (an additional $589.8 million has been generated by Challenge Grants). Through the matching program, the Endowment has played an important role in the remarkable five-fold growth in total private support for the arts and the humanities in the United States since 1971.

Matching offers are made to support specific projects in all divisions of the agency. The offer may represent the entire Endowment award to the grantee or, as is often the case, may be part of a "combination" grant -- partly an outright award, partly a matching grant. The outright portion helps get the project underway until gifts can be raised in response to the matching offer.

Although treasury funds are not awarded for basic institutional support, their stimulation of private-giving inevitably has the effect of improving the long-term health of humanities institutions by forging relationships between donors and grantees. In this connection, it is important to note that most grantees also contribute their own resources to NEH-supported projects through cost-sharing.

The Endowment has recently implemented several procedural modifications to make matching grants even more effective. Each NEH program has improved and standardized communications with potential applicants concerning the mechanics and usefulness of matching grants. The rules regarding the eligibility of donors have also been broadened, and the matching of pledges of gifts rather than only gifts actually received by the grantee are now allowed on a case-by-case basis. In addition, the Endowment's enabling legislation was amended in December 1985 to permit grantees of the state humanities councils to certify gifts directly rather than forwarding the gifts to the councils for certification. The Endowment is now drafting guidelines for implementing this new procedure. Self-certification should streamline the process of releasing federal matching funds to the councils' grantees and may help to generate additional local contributions to individual humanities projects.

FY 1985 was a record year for the use of matching funds by the Endowment; treasury funds of $10.78 million helped stimulate more than $17.8 million in non-federal support for 280 humanities projects. This level of third party support was almost 30 percent higher than the amount generated in FY 1984. Examples of matching grants drawing treasury funds in FY 1985 include the following:

-- The Folger Shakespeare Library in Washington, D.C. received $9,200 in treasury funds in partial support of its efforts to establish a center for the study of British political thought in the 16th, 17th, and 18th centuries. The Center's

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activities include seminars, conferences, colloquia, and the publication of works produced by resident and visiting scholars.

-- $46,000 in treasury funds matched an equal amount of non-federal gifts to the University of Michigan to provide continued support for the Middle English Dictionary project being directed by Jay L. Robinson.

-- In FY 1985, Jack H. Hexter at Washington University in St. Louis used treasury funds of $8,400 to help support a conference to be held in 1986 on "The Making of Modern Freedom." Leading American and British historians will meet to discuss the meaning of the concept of freedom during the period 1603-1672, the age of parliamentary reform in England.

-- Columbia University received $300,000 in treasury funds to provide continued support for its training program for book conservation and library preservation administrators.

-- In FY 1985, Patricia Holland at the University of Massachusetts in Amherst used $82,333 in treasury funds to continue compiling a scholarly edition of the papers of Elizabeth Cady Stanton and Susan B. Anthony, co-founders of the American women's rights movement.

-- Ernest A. Menze of Iona College in New York received $5,000 in treasury funds to match private gifts in support of his translation and critical edition of Johann Gottfried Herder's classic work Philosophy of the History of Man, first published in 1774.

-- The Anchorage History and Fine Arts Museum received treasury funds of $15,000 to match private contributions to install a permanent exhibition on the history of Alaska that emphasizes the relationships of people to the environment during the last two centuries.

-- WETA in Washington, D.C. used matching funds of $600,000 to support production of a nine-part documentary series for television on the interplay of indigenous, Islamic, and Western influences in African history and culture.

In FY 1986 the appropriation of $11.59 million in treasury funds will stimulate a minimum of $11.59 million in non-federal funds for an estimated 290 humanities projects and programs.

The amount of treasury funds requested in the FY 1987 budget will allow the Endowment to keep pace with the unprecedented growth of non-federal support for individual humanities projects. With an agency budget of $126.44 million, treasury funds of $12.5 million would permit NEH to extend matching support to about 315 projects. The allocation of $12.5 million represents 11.15 percent of total program funds, the highest percentage since FY 1974 when the Endowment's budgets were much smaller. Treasury funds are essential in the agency's continuing efforts to stimulate private sector contributions to discrete humanities projects.

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ADMINISTRATIVE FUNDS
(Definite Funds in Thousands)

	FY 1985 Actual	FY 1986* Approp.	FY 1987 Request	FY 1986-87 Increase or Decrease (-)
Administrative funds	$13,891	$14,115	$14,300	$185

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NATIONAL ENDOWMENT FOR THE HUMANITIES
ADMINISTRATIVE FUNDS

Object Classification		FY 1985 Actual	FY 1986* Approp.	FY 1987 Request	FY 1986-87 Increase or Decrease (-)
11.1	Full-Time Permanent Positions	$ 6,988,200	$ 7,320,000	$ 7,460,000	$140,000
11.3	Other than Full-Time Permanent	434,300	450,000	460,000	10,000
11.5	Other Personnel Compensation	75,500	78,000	80,000	2,000
11.9	Total Personnel Compensation	7,498,000	7,848,000	8,000,000	152,000
12.1	Personnel Benefits - Civilians	841,200	880,000	895,000	15,000
13.0	Benefits for Former Personnel	19,200	20,000	20,000	--
	Total Salaries and Benefits	8,358,400	8,748,000	8,915,000	167,000
21.0	Travel and Transportation of Persons	285,700	310,000	315,000	5,000
22.0	Transportation of Things	9,900	10,000	10,000	--
23.0	Rent, Comm., and Utilities	711,400	750,000	760,000	10,000
23.1	SLUC	1,677,700	1,678,000	1,272,000	(406,000)
24.0	Printing and Reproduction	299,400	350,000	360,000	10,000
25.0	Other Services	954,600	964,000	1,265,000	301,000
25.92	Panelist Comp. and Travel	578,200	595,000	620,000	25,000
25.96	Humanities Studies	752,900	530,000	600,000	70,000
26.0	Supplies and Materials	132,400	120,000	122,000	2,000
31.0	Equipment	130,200	60,000	61,000	1,000
	TOTAL APPROPRIATED FUNDS	$13,890,800	$14,115,000	$14,300,000	$185,000
	Reimbursable Services for IMS	$80,600	$75,000	$75,000	--

* Does not reflect the 4.3 percent reduction pursuant to the Balanced Budget and Emergency Deficit Control Act of 1985 (Gramm-Rudman-Hollings Act).

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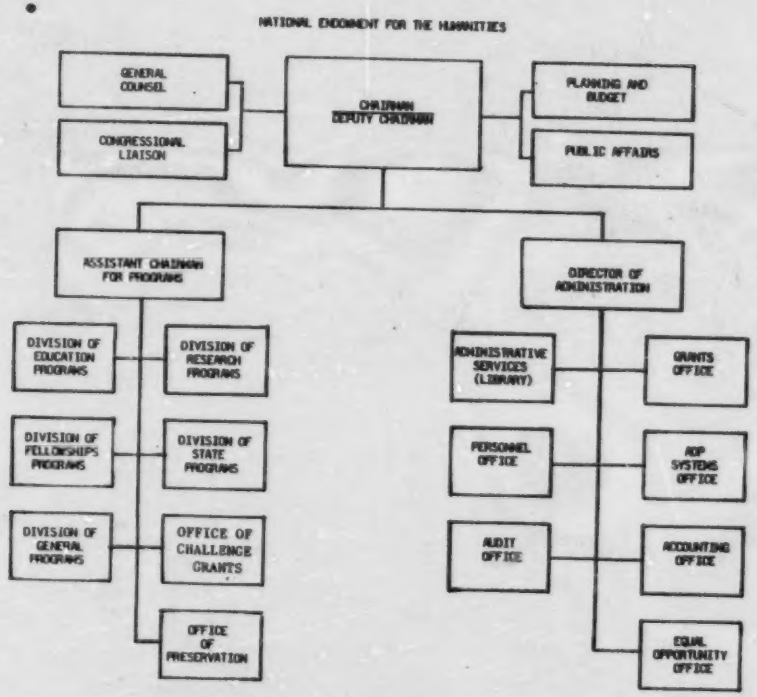

January 1986

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NATIONAL ENDOWMENT FOR THE HUMANITIES
PERSONNEL SUMMARY
FTE Estimates as of January 1986

	FY 1985 Actual	FY 1986 Estimate	FY 1987 Request
Chairman's Office[1/]	9.8	10	11
Public Affairs	13.5	14	14
Planning and Budget	9.2	8	8
General Counsel[2/]	4.7	5	5
Subtotal.....	37.2	37	38
Division of Education Programs	20.4	22	22
Division of Fellowships & Seminars	31.3	31	31
Division of General Programs	33.3	33	32
Division of Research Programs	28.2	29	29
Division of State Programs	11.5	12	12
Office of Challenge Grants	6.2	7	7
Office of Preservation	2.6	4	4
Subtotal.....	133.5	138	137
Director of Administration	1.3	1	2
Grants Office	19.1	19	18
Administrative Services	17.6	17	17
Accounting	11.6	11	10
Data Processing Systems	12.1	13	13
Personnel[3/]	15.6	14	12
Audit	5.8	6	6
Equal Opportunity Office	1.8	2	2
Subtotal.....	84.9	83	80
TOTAL.....	255.6	258[4/]	255[4/]

1/ Includes Deputy Chairman, Assistant Chairman for Programs, and Congressional Liaison.
2/ Includes FTE for members of the National Council on the Humanities.
3/ Includes "floater" clerk-typists who are assigned on an "as needed" basis throughout the Endowment.
4/ Full-Time Equivalency ceilings for 1986 and 1987.

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NATIONAL ENDOWMENT FOR THE HUMANITIES
Administrative Obligations - FY 1985 - FY 1987
($'s in thousands)

	FY 1985 Actual	FY 1986* Estimate	FY 1987 Request
Chairman's Office[1/]	$ 456	$ 484	$ 546
Public Affairs	644	695	709
Planning and Budget[2/]	1,127	825	911
General Counsel	232	242	247
Subtotal.....	2,459	2,246	2,413
Division of Education Programs	850	938	1,027
Division of Fellowships & Seminars	1,357	1,390	1,538
Division of General Programs	1,422	1,480	1,430
Division of Research Programs	1,184	1,250	1,345
Division of State Programs	516	560	611
Office of Challenge Grants	308	342	349
Office of Preservation	139	198	202
Subtotal.....	5,776	6,158	6,502
Director of Administration	55	45	98
Grants Office	595	625	607
Administrative Services[3/]	3,080	3,034	2,721
Accounting	320	320	300
Data Processing Systems	692	732	753
Personnel	432	420	388
Audit	297	315	321
Equal Opportunity Office	76	81	83
Subtotal.....	5,547	5,598	5,271
President's Committee on the Arts and the Humanities[4/]	109	113	114
TOTAL.....	$13,891	$14,115	$14,300

1/ Includes Deputy Chairman, Assistant Chairman, and Congressional Liaison.
2/ Includes Humanities Studies.
3/ Includes FTS, postage, local telephone service, and building rent for the Old Post Office.
4/ Transfers to NEA to provide support for the Committee.

* Does not reflect the 4.3 percent reduction pursuant to the Balanced Budget and Emergency Deficit Control Act of 1985 (Gramm-Rudman-Hollings Act).

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ADMINISTRATIVE BUDGET
($14,300,000)

The purpose of administrative funds is to provide the staff, space, services, and supplies needed by the Endowment to carry out its legislated mission of promoting the humanities. The appropriation request for administrative funds in FY 1987 is $14,300,000, an amount which would allow NEH to maintain its current level of services and provide the necessary staff and funds to meet anticipated workloads. Moreover, it is a budget which reflects the Administration's commitment to increasing management efficiency while reducing overhead costs to the American taxpayer.

The Endowment's primary mechanism for carrying out its legislated responsibilities is the award of grants; approximately 70 percent of the Endowment's staff is directly involved in this process. The process begins with the planning of programs and the formulation of guidelines. Applications to the Endowment for support must then be acknowledged, screened to insure that they meet the appropriate application criteria, thoroughly reviewed by staff and evaluated by outside experts, and ultimately acted upon by the chairman, with the advice of the National Council on the Humanities. Successful applications become grants which must be processed and administered. NEH staff also frequently consult with unsuccessful applicants concerning ways to revise their applications.

All of these tasks require not only a staff expert in the humanities but also highly qualified advisers including reviewers, site visitors, panelists, and the 26 members of the National Council on the Humanities. The staff and advisers directly involved in application and grant processing are supported by additional staff responsible for a wide variety of policy and administrative functions.

The table at the beginning of this section depicts the Endowment's administrative funds by object classification for FY 1985-87. The material that follows presents these object classes in more detail. The FY 1986 estimates do not reflect Gramm-Rudman-Hollings reductions. If the 4.3 percent Gramm-Rudman-Hollings automatic reductions take place in FY 1986, NEH will have to reduce its administrative obligations by $607,000. This will affect every area of the administrative budget. The Endowment will have to reduce the amount it spends for staff resources, staff travel, printing, supplies, equipment, and contractual services and postpone planned activities such as ADP improvements.

1100-1300 - PERSONNEL COMPENSATION AND PERSONNEL BENEFITS

	FY 1985 Actual	FY 1986 Estimate	FY 1987 Request
Total Compensation and Benefits	$8,358,000	$8,748,000	$8,915,000

These object classes contain support for the salaries and benefits of all employees of the Endowment, including full-time permanent, part-time permanent, temporary, and intermittent

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appointments (members of the National Council on the Humanities), in addition to overtime costs. NEH is authorized 258 FTE's (Full-Time Equivalencies) for staffing in FY 1986 and 255 FTE's in FY 1987.

The above estimate for FY 1987 reflects the cost of 252 FTE's at current pay levels. In FY 1984 NEH began to provide the full range of administrative services to the Institute of Museum Services (IMS), which is now located at the Old Post Office Building. These services, previously provided by the Department of Education, will require approximately three staff years of effort. No funds are shown in the above estimates for this work as IMS will reimburse NEH for the cost of these services. The staffing for the work must be absorbed within the 255 FTE authorization.

Slight budget increases are needed each year to fund (1) promotions and within-grade increases, (2) payments to merit pay personnel on October 1 of each year, (3) incentive awards, and (4) terminal leave payments.

Applications are expected to increase over the next two years. The agency will be able to handle the related increased workloads within the existing staffing authorization because productivity gains will be realized as upgrades and enhancements are made to the automated application and grant information system.

The estimates for personnel benefits also provide for the government's share of contributions to the Civil Service Retirement Fund, Social Security, the Federal Employees' Group Life Insurance, and health benefits. Since January 1984, all new federal employees have been covered by Social Security. The employing agency must match each new employee's 7.15 percent Social Security payment in addition to paying another 7 percent of the employee's salary to the Office of Personnel Management for the Federal Employees Retirement System. Consequently, an agency must now pay 14.15 percent of a new employee's salary for retirement and Social Security coverage.

The estimate for benefits for former personnel (object classification 13) is for severance pay, unemployment compensation, and payments for injuries sustained in the workplace.

2100 - TRAVEL AND TRANSPORTATION OF PERSONS

	FY 1985 Actual	FY 1986 Estimate	FY 1987 Request
Total Travel	$286,000	$310,000	$315,000
Staff Travel	205,000	223,000	226,000
Council Travel	56,000	60,000	61,000
Consultant Travel	25,000	27,000	28,000

The funds in this object classification provide for the travel and subsistence costs of NEH staff, members of the National Council, and consultants and experts used mainly in peer review of applications. Staff travel includes local transportation and other

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travel to conduct official business, site visits to perform audit of grants, lectures and presentations by NEH staff concerning Endowment policies and programs at selected professional group meetings, and staff attendance at conferences, symposia, and training courses.

NEH staff undertake travel in order to explain new grant programs and directions, to advise potential applicants, to advise and monitor grantees, to provide service to the field through workshops and conferences, and to represent the Endowment at major professional conferences.

The National Council on the Humanities meets in full session four times a year in Washington, D.C. to review applications and make recommendations to the chairman for funding specific projects. Special committees of the National Council also meet, and the full Council may have additional meetings on specific policy issues once or twice during the year. There are 26 members on the Council plus the Endowment chairman.

The estimates for consultant travel represent the amounts required to reimburse those persons who consult with and advise the chairman and program officials on policy and program matters. In many cases these persons receive no salary, only travel costs.

2200 - TRANSPORTATION OF THINGS

	FY 1985 Actual	FY 1986 Estimate	FY 1987 Request
Transportation of Things	$10,000	$10,000	$10,000

These estimates provide for United Parcel Service and other common carrier expenses. The use of such transportation is required for packages of applications, films, and other objects too large for transmittal through U.S. Postal Service facilities.

2300 - RENT, COMMUNICATIONS, AND UTILITIES

	FY 1985 Actual	FY 1986 Estimate	FY 1987 Request
Total Rent, Comm., and Utilities	$2,389,000	$2,428,000	$2,032,000
Office Space (SLUC)	1,678,000	1,678,000	1,272,000
Equipment Rentals	239,000	270,000	277,000
FTS and Long Distance	216,000	215,000	213,000
Local Telephone Service	110,000	115,000	120,000
Postage	146,000	150,000	150,000

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Office Space (SLUC) - In April 1983, the Endowment moved to the renovated Old Post Office Building (OPO). The General Services Administration is holding SLUC in FY 1986 to the FY 1985 rates. However, in FY 1987 GSA is lowering the SLUC by 25 percent, to $1,272,000.

Equipment Rentals - This sum covers the cost of reproduction equipment and ADP terminals and associated equipment. These items have been instrumental in increasing productivity.

FTS - This sum covers the cost charged by GSA for the use of the Federal Telecommunications System's on-line network. The Endowment has been notified by GSA to budget $213,000 for FTS in FY 1986.

Telephones - This sum covers the cost of the Endowment's telephone services and instruments.

2400 - PRINTING AND REPRODUCTION

	FY 1985 Actual	FY 1986 Estimate	FY 1987 Request
Total Printing & Reproduction	$299,000	$350,000	$360,000

The funds in this object class provide for the costs of printing forms and publications such as Humanities, the Annual Report, program brochures, posters, grant applications, program announcements, guidelines, grant award announcements, agency forms, letterhead stationery, and envelopes.

In FY 1985, printing policies and procedures were implemented to achieve reductions in publication costs and quantities by eliminating volume mailing of program guidelines and by using a combination of advertisements and small, inexpensive flyers to announce application deadlines and program eligibility criteria. The increase of $51,000 in FY 1986 is due to some large printings of program guidelines that occurred at the beginning of FY 1986, but that should have taken place at the end of FY 1985.

2500 - OTHER CONTRACTUAL SERVICES

	FY 1985 Actual	FY 1986 Estimate	FY 1987 Request
Total Other Contr. Srvcs.	$955,000	$964,000	$1,265,000

This object class provides for contractual services required by the Endowment that are not covered in any of the preceding categories. These include: (1) Intergovernmental Personnel Act assignments (IPAs); (2) consultant and advisory services to the chairman, the National Council, and program officials; (3) NEH's share of support for the President's Committee on the Arts and the Humanities; (4) support, maintenance, and improvement of the

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Information Management System, consisting of data and word processing facilities; (5) audits of grantees as provided by the Department of Health and Human Services and independent public accounting firms; (6) the automated payroll services provided by the General Services Administration; (7) employee training; (8) employee health unit services; (9) mailing services; (10) fees for site visitors who evaluate selected NEH grants; (11) alterations to office space; and (12) security guard service at the Old Post Office Building.

The increase in FY 1987 is attributable to the phased-in funding of IPAs who were charged to program funds in previous years. The FY 1987 amount above includes a full year's funding for 13-15 IPAs.

2592 - PANELISTS' CONTRACTS

	FY 1985 Actual	FY 1986 Estimate	FY 1987 Request
Panelists' Contracts	$578,000	$595,000	$620,000

The funds in this sub-object class provide for panelists' travel, subsistence, and honoraria.

Given the provision in the NFAH Act that panels "shall have broad geographical and culturally diverse representation" and the need for grant decisions to be based on careful assessment by field experts, the Endowment and the National Council believe that adequate support for full panel review merits highest priority. The panel costs projected for FY 1987, therefore, reflect the Endowment's intention to recruit the most competent panelists regardless of geographical location and to give them sufficient time to perform a thorough evaluation of all the proposals submitted to the Endowment. This will help insure that those projects subsequently receiving federal support will be those most likely to make important contributions to the humanities.

2596 - HUMANITIES STUDIES

	FY 1985 Actual	FY 1986 Estimate	FY 1987 Request
Humanities Studies	$753,000	$530,000	$600,000

Through Humanities Studies the Endowment supports research to inform the planning and policy deliberations of the agency and the humanities community. Projects supported include both national surveys that collect basic data on conditions in the humanities as well as analytical studies that address fundamental policy questions concerning the humanities. National surveys supported annually include the National Research Council's studies of humanities doctorates, and the Higher Education Surveys, a system which provides timely data on federal policy issues relating to higher education. The analytical studies are intended to address issues of basic concern in the humanities and are invited by means

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of targeted competitions. In FY 1986 and 1987 attention will focus on special studies concerning the condition of the humanities generally and the state of humanities education in particular, as mandated by Congress in its reauthorization legislation for the Endowment.

The decrease in funding for the program between FY 1985 and FY 1986 is attributable to the discontinuation of the program's open grant competitions after FY 1985. The requested increase for FY 1987 is necessary to enable the program to award additional contracts in support of data collection activities associated with the Congressionally-mandated studies.

2600 - SUPPLIES AND MATERIALS

	FY 1985 Actual	FY 1986 Estimate	FY 1987 Request
Total Supplies & Materials	$132,000	$120,000	$122,000

The estimates in this object class provide for the cost of expendable supplies such as paper, pens, writing tablets, and typewriter and ADP parts required to carry on the daily business of the Endowment.

3100 - EQUIPMENT

	FY 1985 Actual	FY 1986 Estimate	FY 1987 Request
Total Equipment	$130,000	$60,000	$61,000

Estimates provide for all equipment, furniture, and office machines having a useful life in excess of one year -- such items as chairs, desks, file cabinets, ADP equipment, typewriters, calculators, dictaphones, and transcribers. This object classification also includes books purchased for the NEH library. Actual expenses in FY 1985 were higher due to one-time capital outlays for ADP equipment and systems office furniture parts.

NEH ADMINISTRATIVE IMPROVEMENTS IN FY 1985

There were many improvements in the Endowment's administrative systems and procedures in FY 1985. These improvements streamlined operations in several offices, thereby giving the Endowment the ability to absorb new and increased activities in other areas without a commensurate increase in staff. In addition, the Endowment has been able to absorb (within its present FTE ceiling) the workload associated with servicing the Institute of Museum Services. A listing of the more significant improvements follows.

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Automatic Data Processing

Grants Processing: Significant improvements were made in the automated processing of various grants administrative functions. As a result of these enhancements, jointly carried out by the Grants Office and ADP, several forms were eliminated, and the time to process and print grant and related documents was reduced by approximately 30 percent. The standardization effort also eliminated redundant keying and lowered the error rate by a considerable margin.

Training: The Endowment continued giving high priority to provide training at all levels of the agency to secretarial/clerical and professional staff in the use of automation. The in-house training conducted in 1985 has enhanced the skills of 63 professional and 108 secretarial/clerical employees.

Feasibility Tests of Microprocessors: As planned, the Endowment continued evaluating the potential use of microprocessors, and significant improvements were made. Several offices previously involved in labor intensive manual preparation of statistics and analytical data gathering are now aided by the readily adaptable software of these machines.

Public Affairs Office

As a result of improved policies and procedures, substantial savings were achieved in the printing and distribution of Endowment materials such as program announcements and guidelines: The Office:

-- expanded use of third class bulk rate mailings instead of first class.

-- established data-processed mailing lists of audiences regularly receiving agency program information. This has reduced the number of mailing labels purchased from outside vendors.

-- placed, at no cost to the agency, copies of program descriptions and deadlines in several journals, magazines, and newsletters. This free advertising reached an audience in excess of 300,000 readers.

-- reduced printing costs as a result of: greater design standardization involving the consolidation of formats into five basic sizes; the production of materials in typescript, rather than typeset, form; the use of computer interface technology, whenever feasible, to reduce keyboarding costs for typesetting; and the production of publications under a term contract through the Government Printing Office.

-- established policies to control costs and reduce volume by restricting the types of publications that may be bulk mailed to less expensive self-mailer posters or flyers.

-- installed a central Telecommunications Device for the Deaf (TDD) to serve more effectively the hearing-impaired applicants to Endowment programs. Free announcements were placed in appropriate publications inviting inquirers to use the special TDD phone number.

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Planning and Budget

Several improvements were made to the office's data bases resulting in the ability to provide more timely, accurate information in response to inquiries from the Congress, the field, and agency management. For example, computer codes used to flag grant records according to project characteristics such as scholarly discipline, purpose, impact, and topical relevance have been extensively revised to improve the retrieval of the kinds of information about NEH grants of current interest to the Endowment, other federal agencies, the Congress, and the public.

Personnel Office

The Personnel Office and the ADP Office embarked on the successful development of an automated personnel processing system. By the end of FY 1985, the base system for processing personnel actions had been tested, and all employee and support files had been entered into the system. The Personnel Office has begun to utilize this automated processing system, moving away from its manual processing of personnel actions and records. The system has greatly enhanced the accuracy of the data on personnel actions, and through its reports, has provided many new tools for surveying information about the workforce. This new personnel processing system was developed and implemented at a lower cost than having such services provided by another federal agency. The National Endowment for the Arts and other small federal agencies have expressed an interest in utilizing the software of this system.

Audit Office

In an effort to assist the state humanities councils in achieving greater efficiency in their office financial management procedures and greater accuracy in their financial reports to NEH, the NEH Audit Office prepared an accounting manual detailing accounting and reporting procedures that comply with OMB Circular A-110 standards. The draft manual was completed in FY 1985 and distributed for comment to all state councils. In FY 1986, a revised edition of the manual incorporating the state councils' comments will be distributed for implementation in full or part by the state councils. The format of the manual has been so designed that it can be adopted for manual or computerized use. A significant by-product of the work on the manual was the improvement in procedures of NEH's own audit responsibilities of the fifty-three state humanities councils.

Accounting Office

In accordance with U.S. Treasury requirements, all letter-of-credit grantees were converted to the new electronic funds transfer system (LOC-TFCS). This conversion has contributed to a slight decrease in workload for the Accounting Office and should decrease the amount of government funds advanced at any one time.

Reports which were previously typed and mailed to the Treasury are now sent through the use of the Treasury telecommunications system. Computer programs were written or modified to generate reports previously handwritten or typewritten. This eliminated the need for proofing or reconciling the reports since the information generated by the computer has already been reconciled.

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Grants Administration

Official Notice of Action: A new form was developed that can be used not only as a notice of an initial award but also as a notice of almost any kind of action relating to a grant. This new form and the computer programming done by ADP have revolutionized the way the Grants Office processes awards, amendments of funds, notices of extensions, and other modifications to the grant record. These notices will be issued more promptly and with a great deal less effort.

Revision of the General Grant Provisions for Grantee Organizations: Until this year, the federal regulations and NEH policies that applied to the administration of grants were found in individual policy statements, the out-of-date General Grant Provisions drafted in the first years of the Endowment's existence, the uniform requirements of A-110 or A-102, and Enclosures 1 and 2 to the award notice. The revised General Grant Provisions provide under one cover clear and succinct statements on all the policies and regulations that apply to NEH grants. Not only are the new provisions well organized and informative, their use will also allow us to reduce significantly the amount of material that is enclosed in an award package.

Program Activity

The reorganization of the Division of Research Programs has enabled program categories that share common elements and purposes to be grouped together. For the most part, they will share common deadlines. Not only will this reorganization allow the division's panelists to make comparative judgments about similar applications, but also it will permit an evenness of work flow among units within the division. The result will be more flexibility in handling proposals and greater efficiency in the review process.

The Research Division has also developed a single booklet of guidelines to be used by all programs in the division. Having a single booklet will make the process of subsequent revision and publication simpler and will mean that inconsistencies among publications prepared at different times will be eliminated.

In the Fellowships and Seminars Division, the forms for the panelist evaluation of fellowship applications were modified so that staff no longer has to enter applicant information. Because five sheets are required for each of the over 4,600 applications to the division, the saving of typist time was considerable. A second modification of the panelist evaluation sheet allows for easy transmission of panelist comments to inquiring applicants with minimum staff involvement.

The Division of State Programs produced the brochure Introduction to State Programs to orient new volunteer state council members to their duties and responsibilities and their accountability for the stewardship of federal funds.

In the General Programs Division, application review cycles were reduced from seven to five months, thus allowing applicants to resubmit rejected applications within a month to six weeks, rather than waiting almost a year.

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NATIONAL ENDOWMENT FOR THE HUMANITIES

Summary of Grants and Awards by State

Fiscal Year 1985[1/]

State	No. of Projects	Amount Obligated
Alabama	20	$1,215,690
Alaska	6	755,332
Arizona	19	1,081,903
Arkansas	5	538,744
California	195	9,633,203
Colorado	19	898,791
Connecticut	59	2,313,268
Delaware	15	933,843
District of Columbia	72	5,315,633
Florida	33	2,284,757
Georgia	36	1,649,943
Hawaii	13	566,413
Idaho	5	309,768
Illinois	120	5,541,271
Indiana	60	2,933,629
Iowa	26	924,996
Kansas	22	1,948,054
Kentucky	18	896,009
Louisiana	25	1,379,287
Maine	16	888,851
Maryland	59	3,640,787
Massachusetts	179	9,299,454
Michigan	45	2,963,023
Minnesota	39	2,135,741
Mississippi	23	851,174
Missouri	29	1,690,285
Montana	6	620,665
Nebraska	16	930,261
Nevada	5	356,150
New Hampshire	18	1,039,231
New Jersey	64	3,138,718
New Mexico	23	1,528,049
New York	311	22,415,930
North Carolina	66	3,407,962
North Dakota	2	578,500
Ohio	58	2,678,127
Oklahoma	13	1,050,454
Oregon	19	827,308
Pennsylvania	138	6,211,558
Rhode Island	22	1,363,240
South Carolina	33	1,369,498

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Summary of Grants and Awards by State

Fiscal Year 1985[1/] - Continued

State	No. of Projects	Amount Obligated
South Dakota	6	763,190
Tennessee	22	1,085,987
Texas	82	3,772,279
Utah	6	534,660
Vermont	14	1,120,657
Virginia	58	2,597,722
Washington	37	1,655,056
West Virginia	7	677,103
Wisconsin	37	1,773,841
Wyoming	4	483,604
Puerto Rico	4	466,100
Virgin Islands	1	1,350
Other[2/]	11	234,490
GRAND TOTAL	2,241	$125,671,544

1/ Funds include definite, treasury, challenge, and carryover funds obligated in FY 1985 for new and supplemental awards; excludes gifts.

2/ Awards to American citizens residing overseas at time of award.

Note: Detail does not add to total due to rounding.

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NATIONAL ENDOWMENT FOR THE HUMANITIES

Summary of Grants and Awards, FY 1985

Division/Program	No. of Projects	Amount Obligated 1/ Outright	Matching 2/	Total
EDUCATION PROGRAMS	177	$16,901,320	$988,496	$17,889,816
Humanities Instruction in Elementary and Secondary Schools	62	7,310,205	657,173	7,967,378
Exemplary Projects and Humanities Programs for Nontraditional Learners	46	4,878,026	154,153	5,032,179
Central Disciplines in Undergraduate Education	69	4,713,089	177,170	4,890,259
FELLOWSHIPS AND SEMINARS	618	14,205,234	1,103,250	15,308,484
National Endowment for the Humanities Fellowships				
Fellowships for Independent Study and Research	136	3,361,933	--	3,361,933
Fellowships for College Teachers	109	2,655,243	--	2,655,243
Summer Stipends	219	657,000	--	657,000

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NATIONAL ENDOWMENT FOR THE HUMANITIES

Summary of Grants and Awards, FY 1985 (cont'd)

	No. of Projects	Amount Obligated 1/ Outright	Matching 2/	Total
FELLOWSHIPS AND SEMINARS (cont'd)				
Summer Seminars				
Summer Seminars for College Teachers	70	3,997,976	--	3,997,976
Summer Seminars for Secondary School Teachers	57	1,960,488	500,000	2,460,488
Undergraduate Fellows in the Humanities	10	697,594	--	697,394
Fellowships at Centers for Advanced Study	17	875,000	603,250	1,478,250
GENERAL PROGRAMS	333	20,825,113	3,265,347	24,090,461
Humanities Projects in Media	78	7,736,635	1,637,496	9,374,131
Humanities Projects in Museums and Historical Organizations	137	8,125,531	1,442,961	9,568,492
Humanities Projects for Youth	54	662,771	--	662,771
Humanities Projects for Adults	25	1,560,979	140,278	1,701,257
Humanities Projects in Libraries	39	2,739,197	44,613	2,783,810

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NATIONAL ENDOWMENT FOR THE HUMANITIES

Summary of Grants and Awards, FY 1985 (cont'd)

	No. of Projects	Amount Obligated 1/ Outright	Matching 2/	Total
RESEARCH PROGRAMS	874	16,856,647	7,513,136	24,369,782
Basic Research				
Project Research	80	3,240,720	641,811	3,882,531
Intercultural Research	8	900,000	1,726,245	2,626,245
Humanities, Science and Technology	13	729,785	--	729,785
Research Conferences	44	346,871	105,910	452,781
Travel to Collections	411	205,500	--	205,500
Reference Works				
Tools	58	2,638,278	1,444,881	4,083,159
Editions	66	2,707,135	1,036,746	3,743,881
Translations	54	1,100,000	225,730	1,325,730
Resources				
Access	74	4,662,429	2,024,432	6,686,861
Preservation	1	--	300,000	300,000
Publications	65	325,928	7,381	333,309

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NATIONAL ENDOWMENT FOR THE HUMANITIES

Summary of Grants and Awards, FY 1985 (cont'd)

	No. of Projects	Amount Obligated 1/		
		Outright	Matching 2/	Total
STATE PROGRAMS	73	19,560,045	4,852,956	24,413,000
CHALLENGE GRANTS	166	--	19,600,000	19,600,000
Grand Total	2,241	$88,348,359	$37,323,185	$125,671,544

1/ Includes definite, treasury, Challenge, and carryover funds obligated for new grants, supplemental awards on previous years' grants, program contracts, and transfers to and from other agencies.

2/ Includes definite program funds used to match gifts.

Note: Rows and columns may not add exactly to totals due to rounding.

INSTITUTE OF MUSEUM SERVICES

SUMMARY STATEMENT

The Institute of Museum Services, in accordance with the President's budget, requests funds for FY 1987 only as required to terminate the agency in an orderly fashion. The IMS estimates that the costs of closing out current grants and preparing agency files for transmission to the National Endowment for the Humanities will require an administrative budget of $330,000. This amount includes the total costs of severance and unemployment expenses (as reimbursed to the U.S. Department of Labor) for the IMS employees who will lose their positions at the IMS as a result of the phase-out.

IMS grants have been provided to museums of all types, including: art and history museums, science and technology museums; zoos, planetariums, historic houses, botanical gardens; and others. Although IMS grants have helped create a solid base of financial support for the Nation's museums, ultimately the responsibility for museum support must lie with the museums themselves as well as with state and local governments, and private donors and benefactors.

This request is neither a denial of the worth of American museums nor a repudiation of the accomplishments of museums using these federal funds during this nine year period; rather, it recognizes the severe federal deficit and budget problems affecting all sectors of the economy, museums included. IMS is proud of the contribution it has made to museums' programs and improved operational capacity. However, the need to reduce the federal budget continues to be a priority of the President. In light of reduced inflation, museums are in much better position now than when this Administration first took office in 1981. In January, 1981, the rate of inflation was 12.4%, as measured by the change in the consumer price index during the preceding 12 month period. By comparison, the inflation rate (using the same method) for the period ending December, 1985 was 3.5%; thus, these organizations no longer face an annual escalation of their costs amounting to nearly 10% of their annual operating costs; perhaps the best grant of all.

The Institute of Museum Services' request of $330,000, as stated, will provide for the orderly close down of the agency's functions. The National Endowment for the Humanities will handle the final close down of grants with project periods exceeding six months. Funds have been budgeted for one meeting of the National Museum Services Board to provide guidance to the staff on the IMS close out and its effect on the museum field. Following is a breakdown of the Institute of Museum Services' FY 1987 budget request.

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INSTITUTE OF MUSEUM SERVICES

ACTIVITY HISTORY

1. GENERAL OPERATING SUPPORT

PROGRAM DESCRIPTION

Since its inception in 1976, the Institute of Museum Services has provided funds to support the efforts of museums to preserve the Nation's historical, scientific, and cultural heritage; to maintain and expand their educational role; and to meet the financial pressures resulting from rising operating costs and increased public demand for museum programs and services. Funds have been provided to all types of museums including art, history, natural history, science and technology, zoos, planetariums, historic houses, botanical gardens, science centers, aquariums, and nature centers.

General Operating Support (GOS) grants are awarded competitively, for a period of one year, to assist museums with their basic operating needs, including administrative costs of maintaining, preserving, and exhibiting their collections; the costs of utilities and security services; and provision of educational programs for the public. The Institute of Museum Services will have made, since 1983 (including the FY 1986 Estimate), 3,962 grants for a total of $69,668,000. 84% of this sum or $58,261,000 was provided for General Operating Support. Currently, the maximum GOS grant is $75,000, and the Institute estimates it will make 450 GOS grants for a (post-sequester) total of $15,984,000 in FY 1986.

In addition to GOS, the Institute makes grants in Museum Assessment (MAP I and MAP II), and in Conservation. The IMS has, since 1981, provided $1,000 Museum Assessment Program (MAP I and MAP II) grants from General Operating Support. MAP I grants support a one-time one-day general assessment of the overall operations and services of a museum. MAP II grants support a one-day assessment of the museum's program for caring for its collection. This grant is specifically designed to cover an honorarium, travel, and per diem costs of the MAP surveyor, technical assistance materials, and the administrative costs of the program. MAP awards have proven to be a low cost method of providing an important service to the nation's museums. The IMS expects, in FY 1986, to spend up to $400,000 from GOS for MAP I and MAP II.

2. CONSERVATION PROGRAM

In 1984 the Congress appropriated funds for Conservation Program (CP) grants to address the conservation needs of collections of all types of museum objects, living and non-living. In FY 1984 and FY 1985, the IMS provided 464 Conservation grants, awarded on a competitive basis, for a total of $6,277,000. In FY 1986, the Institute of Museum Services estimates it will award an additional 260 grants valued at $3,262,000.

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The anticipated distribution of awards by category is displayed below:

AWARD CATEGORIES
(dollars in 000's)

	1985 Actual	1986 Estimate	1987 Estimate
1. General Operating Support			
Obligations	$16,757	$15,984	$ -0-
No. of Applications	1,265	1,345	-0-
No. of Awards	451	450 1/	-0-
Percentage Funded	36%	33%	-0-
2. Museum Assessment Program			
Obligations	$ 499	$ 400	$ -0-
No. of Applications	499	400	-0-
No. of Awards	499	400	-0-
Percentage Funded	100%	100%	-0-
3. Conservation Program			
Obligations	$ 3,221	$ 3,262	$ -0-
No. of Applications	476	475 2/	-0-
No. of Awards	259	260 2/	-0-
Percentage Funded	54%	55%	-0-
Total Obligations	$20,477	$19,646	$ -0-
Total No. of Awards	1,209	1,110	---

1/ General Operating Support grants will not be awarded until July, 1986: estimate is therefore based solely on FY 1985 experience.

2/ Conservation Program grants will not be awarded until September, 1986: estimate is therefore based solely on FY 1985 experience.

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INSTITUTE OF MUSEUM SERVICES
ANALYSIS OF RESOURCES AND STATISTICAL SUMMARY
BUDGET ACCOUNT: 59-0300-0-1-503
($ in Thousands)

	FY 85 ACTUAL	FY 86 PRE-SEQUESTER	FY 86 POST-SEQUESTER	FY 87 REQUEST
Budget Authority				
General Operating Support	17,223	17,120	16,384	0
Conservation	3,254	3,409	3,262	0
Administration	785	795	761	320
National Museum Services Board	71	70	67	10
	21,333	21,394	20,474	330

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3. ADMINISTRATION

INTRODUCTION

The Institute of Museum Services requests $320,000 in administrative funds for FY 1987, an amount which will enable the phase-out of the Institute over a six month period.

1100-PERSONNEL, 1200-BENEFITS, AND 1300-BENEFITS FOR FORMER PERSONNEL

Personnel Compensation

In Fiscal Year 1987, the Institute of Museum Services requests $120,000 for personnel compensation for 4 FTE. These 4 FTE will work to ensure that all federal regulations have been adhered to within the six (6) months it is estimated will be required to terminate the agency. In addition, salaries for National Museum Services Board members have been budgeted for one meeting.

FY 1987 Personnel Compensation: $121,000.
FY 1987 National Museum Services Board Compensation: $2,000.

Personnel Benefits

The IMS requests $18,000 for personnel benefits, a 15% rate reflecting the nature of most IMS employees being relatively new to the federal government. The agency pays into both Civil Service Retirement and Social Security for these employees, boosting the overall agency benefits rate.

FY 1987 Personnel Benefits: $18,000.

Benefits for Former Personnel

The Institute estimates that $25,000 will be required for terminal leave and severance payments to the IMS personnel who will be separated as a result of the agency's termination.

FY 1987 Benefits for Former Personnel: $25,000.

2100 TRAVEL AND TRANSPORTATION OF PERSONS

Funds for staff travel during the six (6) month phase-out period will be used to travel to meetings of museum associations in order to inform them of the IMS's termination. In addition, one last meeting of the National Museum Services Board has been budgeted for and included in this request.

FY 1987 Staff Travel: $7,000.
FY 1987 National Museum Services Board Travel: $8,000.

2200 TRANSPORTATION OF THINGS

Funds in this object class are used for express delivery of time-sensitive materials, such as close-out requirements for IMS grants.

Transportation of Things: $3,000.

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2300 RENT, COMMUNICATIONS AND UTILITIES

Rent for space in the Old Post Office Building for the Institute for six (6) months is estimated to be $55,000, or 1/2 of the FY 1986 level.

FY 1987 RENT: $55,000.

Communications, Utilities, and Other Rent

The Institute requests $11,000 in funds for this object class in order to lease ADP equipment which is connected to the National Endowment for the Humanities' mainframe, and for both local and FTS telephone service.

FY 1987 Communications, Utilities, and Other Rent: $11,000.

2400 PRINTING AND REPRODUCTION

The IMS requests $7,000 for printing for the 6 month phase-out period.

Printing and Reproduction: $7,000.

2500 OTHER SERVICES

The Institute of Museum Services requests $70,000 in other services for FY 1987. The primary expense in this object class is for an Interagency Agreement the IMS has with the National Endowment for the Humanities to provide administrative support for such activities as accounting, ADP, grants management, personnel, and some legal services. In addition, the IMS will have moving expenses associated with the agency's termination.

FY 1987 Other Services: $70,000.

2600 SUPPLIES AND MATERIALS

FY 1987 Supplies and Materials: $3,000.

3100 EQUIPMENT

FY 1987 Equipment: 0

	FY85 ACTUAL	FY86 1/ EST	FY87 REQ
ADMIN	784	761	320
NMSB	71	67	10

1/ FY 1986 column adjusted to reflect Gramm-Rudman-Hollings post-sequester amounts.

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INSTITUTE OF MUSEUM SERVICES
ADMINISTRATIVE BUDGET: DETAIL OF OBJECT CLASSIFICATION 1/
($ in Thousands)

Object Classes		FY 85 Actual	FY 86 2/ Est.	FY 87 Req.
	Personnel Compensation			
11.1	Full-Time Permanent	360	377	120
11.3	Other than Full-Time Permanent	10	0	0
11.5	Other Personnel Compensation	13	5	3
11.9	Total Personnel Compensation	383	382	123
12.1	Personnel Benefits - Civilian	46	50	18
13.0	Benefits for Former Personnel	0	0	25
21.0	Travel and Transportation of Persons	47	37	15
22.0	Transportation of Things	3	3	3
	Rent, Communications and Utilities			
23.1	Standard Level User Charges	109	110	55
23.3	Communications, Utilities & Other Rents	22	18	11
	Total Rent, Communications & Utilities	131	128	66
24.0	Printing and Reproduction	28	17	7
25.0	Other Services	210	208	70
26.0	Supplies and Materials	3	2	3
31.0	Equipment	4	1	0
	Total IMS, Administration	855	828	330

1/ Object Class amounts reflect administrative funds and National Museum Services Board combined totals.

2/ Based on Gramm-Rudman-Hollings post-sequester administrative allocation.

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COMMISSION OF FINE ARTS
BUDGET JUSTIFICATIONS, F. Y. 1987

NOTICE: These budget justifications are prepared for the Interior and Related Agencies Appropriations Subcommittees. Approval for release of the justifications prior to their printing in the public record of the Subcommittee hearings may be obtained from the Subcommittees through the Office of Budget of the Department of the Interior.

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COMMISSION OF FINE ARTS

Budget Justification
Fiscal Year 1987

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COMMISSION OF FINE ARTS

The Commission of Fine Arts was established in 1910 (40 U.S.C. 104) to fill the need for a permanent advisory agency whose members would be qualified to make available to the Government expert opinions on questions of art arising in the course of administration. As an independent agency, it is intended to serve a two-fold purpose; first, to give advice concerning aesthetic standards and matters of civic design involved in the orderly development of the District of Columbia; and second, to furnish expert opinion on questions of art to the President, to the Congress and its Committees, and to the heads of various departments and agencies of the Federal and District Governments. The Commission's primary role is to advise Federal Agencies and the District of Columbia Government on proposed projects which would affect the appearance of the Capital.

The Commission is composed of seven members, appointed by the President, who serve without compensation, receiving only actual travel expenses relative to attending meetings. Since the Commission's inception more than 90 distinguished architects, landscape architects, painters, sculptors and laymen in the field of fine arts have given freely to the Government the benefit of their experience and professional skills in advising the President, the Congress and Government agencies on matters involving the fine arts.

The specific functions of the Commission are as follows:

1. To advise generally upon questions of art when requested to do so by the President, heads of executive departments or by any Committee of either House of Congress.

2. To advise specifically on all plans for parks, public buildings, and other structures constructed by executive departments of the Federal or the District of Columbia Governments.

3. To advise upon location of statues, fountains, and monuments in public squares, streets and parks in the District of Columbia, upon the selection of designs for the statues, fountains, and monuments erected under the authority of the United States and upon the selection of artists for execution of the same.

4. To approve the design and location of national monuments and memorials as required by the specific statutes authorizing them.

5. To regulate the height, exterior design and construction of private and semi-public buildings in certain areas of the National Capital. This action requires review and recommendation to the Mayor of the District of Columbia on the merits of designs submitted for building permits.

6. To advise, as necessary, on projects of an important Federal character outside of the District of Columbia, and to render opinions on the merit of designs for medals, insignia, coins, or other art projects created and produced by the executive departments.

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A comparison between FY 1986 enacted to date and the FY 1987 estimate follows:

(Dollar amounts in thousands)

	FY 1986 Enacted to Date	FY 1986 Adjusted Approp.	FY 1987 Estimate	Inc.(+)or Dec.(-)from Enacted	Permanent Employment as of 12/31/85
Appropriation:					
Salaries and Expenses					
$	380	364	420	+40	
(FTE-T)	(7)	(7)	(7)	(--)	6

Highlights of the FY 1987 Request

The Commission of Fine Arts is requesting an appropriation of $420,000 for fiscal year 1987 to finance the expenses of the seven members of the Commission and the salaries and related costs necessary to finance a supporting staff of six permanent positions.

This request reflects an increase of $40,000 above FY 1986 enacted to date, to maintain the present level of operations of the current onboard staff. An increase of $38,000 will be used to fund publication of a multi-year research effort focusing on the architecture on the White House axis of Sixteenth Street. In the past, funds acquired through the sale of similar publications have been returned to the Treasury. The remaining increase of $2,000 over prior levels is necessary to cover increased operating costs of the Commission which are relatively uncontrollable in nature with no programmatical changes. The changes between FY 1986 enacted to date and FY 1987 are highlighted as follows:

*$+38,000 as a one time cost for publishing the Commission's architectural research material (SIXTEENTH STREET ARCHITECTURE, VOLUME II).

*$+2,000 to provide for increased costs for other services.

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COMMISSION OF FINE ARTS
Salaries and Expenses

Appropriation Summary Statement
(Program and Performance)

The Commission advises the President, Congress and Department heads on matters of architecture, sculpture, painting and other fine arts. The primary function is to preserve and enhance the appearance of the National Capital.

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Appropriation Language Sheet

COMMISSION OF FINE ARTS
Salaries and Expenses

For expenses made necessary by the Act establishing a Commission on Fine Arts (40 U.S.C. 104), [380,000] $420,000. (Department of the Interior and Related Agencies Appropriations Act, 1986, as included in Public Law 99-190.)

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SUMMARY OF REQUIREMENTS
(Dollar Amounts in Thousands)

Appropriation: Salaries and expenses

Summary of base adjustments:	FTE-T	Amount	FTE-T	Amount
Appropriation, FY 1986			7	380
Reductions pursuant to Public Law 99-177				-16
Adjusted FY 1986 Appropriation			7	364
Adjustments to base:				
Adjustment for 1986 impact of Public Law 99-177		16		
Total, adjustments to base				16
FY 1987 Base Budget			7	380

Comparison by activity/ subactivity:	FY 1985 Actual FTE-T	FY 1985 Actual Amount	FY 1986 Enacted to Date FTE-T	FY 1986 Enacted to Date Amount	P.L. 99-177 Reductions Amount	FY 1986 Adjusted Appropriation Amount	FY 1987 Base Budget FTE-T	FY 1987 Base Budget Amount	FY 1987 Estimate FTE-T	FY 1987 Estimate Amount	Inc/(dec) from FY 1986 Appropriation FTE-T	Inc/(dec) from FY 1986 Appropriation Amount	Inc/(dec) from FY 1986 Adjusted Appropriation Amount	Inc/(dec) from FY 1987 Base FTE-T	Inc/(dec) from FY 1987 Base Amount
Administration	6	366	7	380	-16	364	7	380	7	420	0	40	56	0	40
Total requirements	6	366	7	380	-16	364	7	380	7	420	0	40	56	0	40

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Justification of Base Adjustments

(Dollar amounts in thousands)

	FTE-T	AMOUNT
Adjustment for 1986 impact of P. L. 99-177		+16
Total, adjustments to base		+16

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Justification of Program and Performance

Activity: ADMINISTRATION

(dollar amounts in thousands)

	1986 Enacted to Date	1986 Adjusted Approp.	1987 Base	1987 Estimate	Inc. (+)/ Dec. (-) from 1986	Inc. (+)/ Dec. (-) from 1987 Base
$	380	364	380	420	+40	+40
(FTE-T)	(7)	(7)	(7)	(7)	(--)	(--)

Gramm-Rudman-Hollings Impact

Administration	1986 Enacted to Date	P.L. 99-177 Reduction	1986 Adjusted Appropriation
	380	-16	364

To accommodate this midyear budget reduction, two, possibly three of the Commission meetings between February and September may be canceled.

Authorization: 40 U.S.C. 104.

Objectives: To ensure that the city of Washington and the people have a small, simple, effective design review agency to monitor aesthetic development and the appearance of the city, with objective overview and to advise the President, Congress, and various agencies of the Federal and District governments on proposed projects and existing conditions in the Capital. This requires a high level of professional expertise provided by seven Presidentially-appointed well-qualified judges of the arts and supported by a small professional staff.

To provide a professional level of advisory service through review and liaison with the District of Columbia and Federal governments; to provide the administrative services that are required to communicate the advice of the Commission; and to keep accurate records of the Commission's activities and advice.

To produce research on buildings, areas, and plans of and in the city of Washington and to make this scholarly historical and architectural information generally available to the public, to other Government agencies and to the Commission. As plans evolve for parts of the city it is desirable to have specific resources identified in advance and to avoid destruction or impairment of those resources. The specially trained staff architects and historians performing this work are also available to the Commission on a case-by-case basis to provide supporting material on proposed projects, sometimes on very short notice.

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Base Program: The Commission of Fine Arts, an independent advisory agency, reviews proposals affecting the appearance of the Capital; advises the President, the Congress, and the agencies of the Federal and District of Columbia governments on architectual designs and other matters of art. Also conducts review, administration, liaison, research, and publication activities.

The Commission views its continuation in terms of remaining small and independent without substantial program changes.

The Commission provides advisory services for the immediate development of the Capital through study, inspection, research and expert consultation. It maintains continual involvement in ongoing projects such as the International Center site, the Federal Triangle, the Pennsylvania Avenue Plan, and other special areas of the city. It publishes studies such as the special architecture of Sixteenth Street to provide factual material for planning and urban design issues. Some of the material assembled is published so as to be permanently available to operating Government agencies as well as the general public.

The Commission's advice on design, planning and historic preservation is sought by the Federal and District of Columbia governments. The designs of Washington memorials, public buildings, and designs affecting all public landmarks in specified areas of the city have been developed with advice from the Commission of Fine Arts. This advice has been at minimal cost to the Government with modest increases reflecting higher overhead cost rather than expanded programs.

(dollars in thousands)

Increase for FY 1987	FY 1987 Base	FY 1987 Estimate	Increase
$.....	380	420	+40
(FTE-T)	(7)	(7)	(—)

The FY 1987 request reflects an increase of $40,000 to provide for the continuance of existing services without any new program initiatives. The Commission's workload is increasing as project submissions by other government agencies increases. Although the Commission is requesting additional funds to support current onboard full-time staff, no funds are requested at this time for the vacant authorized Architect position which has been partially lapsed in past years due to funding constraints. In the past, these funding problems have been overcome by lapsing the Architect position, redistribution of workload and restructuring a summer intern position. This request reflects an effort to provide funds to maintain the current cost of operations for a permanent onboard staff of six and a summer intern with minimal cost increases in other object classes that are uncontrollable in nature. These increases include an increase in costs for administrative support services by the Department of the Interior, increases in the cost of travel for new Presidential appointees from differing geographic areas, and small increases in communications, supplies and equipment needs. The

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funding increase will also provide for a one time cost for the publication of SIXTEENTH STREET ARCHITECTURE VOLUME II. The cost of printing this book will be returned to the Treasury through its sale by the Superintendent of Documents, as has been the case with all of the previous Commission publications.

Distribution of Change by Object Class

The object class distribution for the proposed increase of $40,000 is as follows:

Object Class	Amount
Printing and reproduction	+38
Other services	+2
Total increase	+40

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Summary of Requirements by Object Class
(dollar amounts in thousands)

Appropriation: Salaries and Expenses	1987 Base FTE-T	1987 Base Amount	1987 Estimate FTE-T	1987 Estimate Amount	Inc.(+)/Dec.(-) FTE-T	Inc.(+)/Dec.(-) Amount
Object Class						
11 Personnel compensation:						
11.1 Full-time permanent	7	236	7	236	--	--
11.3 Other than full-time permanent	--	3	--	3	--	--
Total personnel compensation	7	239	7	239	--	--
Other Objects:						
12.1 Personnel Benefits		26		26		--
21.0 Travel and transportation of persons		15		15		--
23.1 Standard level user charges		54		54		--
23.2 Communications, utilities and other rent		4		4		--
24.0 Printing and reproduction		10		48		+38
25.0 Other Services		26		28		+2
26.0 Supplies and Materials		4		4		--
31.0 Equipment		2		2		--
Total requirements		380		420		+420

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COMMISSION OF FINE ARTS
SALARIES AND EXPENSES

Program and Financing (in thousands of dollars)

Identification code 95-2600-0-1-451	1985 Actual	1986 Estimate	1987 Estimate
Program by activites:			
10.00 Total obligations	366	380	420
Financing:			
25.00 Unobligated balance lapsing	8		
39.00 Budget authority	374	380	420
40.00 Appropriation	374	382	420
40.00 Reduction pursuant to P.L. 99-190		-2	
43.00 Appropriation (adjusted)	374	380	420
Relation of obligations to outlays:			
71.00 Obligations incurred, net	366	380	420
72.10 Receivables in excess of obligations, start of year		-1	
72.40 Obligated balance, start of year	24	30	29
74.10 Receivables in excess of obligations, end of year	1		
74.40 Obligated balance, end of year	-30	-29	-29
77.00 Adjustments in expired accounts	-6		
90.00 Outlays, excluding pay raise supplemental	355	380	420

Object Classification (in thousands of dollars)

Personnel compensation:			
11.1 Full-time permanent	236	236	236
11.3 Other than full-time permanent		3	3
11.5 Other personnel compensation	5		
11.9 Total personnel compensation	240	239	239
12.1 Personnel benefits: Civilian	26	26	26
21.0 Travel and transportation of persons	13	15	15
23.1 Standard level user charges	54	54	54
23.3 Communications, utilities, and miscellaneous charges	3	4	4
24.0 Printing and reproduction	4	10	46
25.0 Other services	25	25	25
26.0 Supplies and materials	1	4	4
31.0 Equipment		2	2
99.9 Total obligations	366	380	420

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COMMISSION OF FINE ARTS
SALARIES AND EXPENSES

Personnel Summary

Identification code 95-2500-01-451	1985 Actual	1986 Estimate	1986 Estimate
Total number of full-time permanent positions	7	7	7
Total compensable workyears:			
Full-time equivalent employment	7	7	7
Average ES salary	72,300	72,300	72,300
Average GS grade	10.20	10.20	10.20
Average GS salary	32,760	32,760	32,760

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COMMISSION OF FINE ARTS
SALARIES AND EXPENSES

Detail of Permanent Positions

Identification code 95-2600-0-1-451	1985 Actual	1986 Estimate	1987 Estimate
ES-6	1	1	1
GS/GM-14	1	1	1
GS-12	2	2	2
GS-9	2	2	2
GS-5	1	1	1
Total permanent positions	7	7	7
Unfilled positions, end of year	-1	--	--
Total permanent positions	6	7	7

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ADVISORY COUNCIL ON HISTORIC PRESERVATION BUDGET JUSTIFICATIONS, F. Y. 1987

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ADVISORY COUNCIL
ON HISTORIC PRESERVATION

FISCAL YEAR 1987 BUDGET JUSTIFICATION

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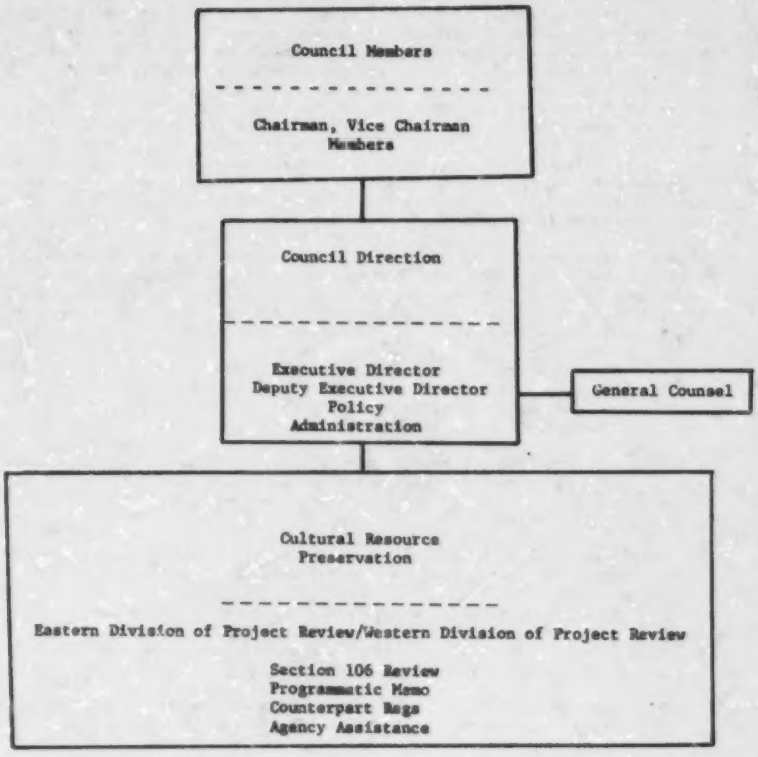
ADVISORY COUNCIL ON HISTORIC PRESERVATION



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General Statement

The Advisory Council on Historic Preservation was established by the National Historic Preservation Act of 1966 (16 U.S.C. 470) to advise the President and Congress on preservation matters and to comment on Federal, federally assisted and federally licensed undertakings having an effect upon historic properties. The Council consists of 19 members, including the heads of 6 federal agencies whose activities have special relationships to historic properties, the Architect of the Capitol, and representatives of the National Trust for Historic Preservation and the National Conference of State Historic Preservation Officers who serve as ex officio members. Also, the President appoints 10 citizen members including a Chairman and 3 other members from the general public, a governor, a mayor, and 4 experts from preservation related disciplines. A Vice Chairman is also appointed by the President from among the citizen members.

The Executive Director heads a staff authorized under P.L. 99-190 at 36 full-time equivalents. Headquarters are located in Washington, DC, with the Western Division of Project Review in Golden, Colorado which deals with review of Federal undertakings in the Western States. The Council members and the Council staff are contained in 2 subactivities:

1. Council Direction consisting of the Council Members, the Executive Director, the Deputy Executive Director and General Counsel, Policy, Publications and Training, Administration and the Word Processing Center.

2. Cultural Resource Preservation consisting of the Office of Cultural Resource Preservation, which is comprised of the Eastern Division of Project Review and the Western Division of Project Review.

The Council implements the policy set forth in the National Historic Preservation Act which requires the Federal Government to:

- o foster conditions under which our modern society and our prehistoric and historic resources can exist in productive harmony and fulfill the social, economic, and other requirements of present and future generations;

- o provide leadership in the preservation of the prehistoric and historic resources of the United States and the international community of nations;

- o administer...prehistoric and historic resources in a spirit of stewardship;

- o contribute to the preservation of prehistoric and historic resources and give maximum encouragement to organizations and individuals undertaking preservation by private means;

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- encourage the public and private preservation and utilization of all usable elements of the Nation's historic built environment; and

- assist State and local governments and the National Trust for Historic Preservation in the United States to expand and accelerate their historic preservation programs and activities.

These policies must be balanced against other Government polices and goals, such as reducing the Federal deficit, achieving energy independence, fostering economic development, and maintaining national security. To achieve this balance, Government agencies are required to take into account the effects of their actions on historic properties. The Council's role is to provide advice and assistance to the President, the Congress, and Federal agencies, and to assist and encourage State and local governments and private parties in preservation activities.

The solution of historic preservation concerns at the Federal level has far-reaching impacts because Federal Government activities have a significant effect on the nation's historic resources. Accommodating preservation values with other public policies requires the awareness of many competing forces and demands. For example, Federal agencies with responsibilities for construction, economic development, national defense, or other missions utilize vast resources to accomplish their goals. Simultaneously, concerned members of the public may promote preservation as their highest priority, while State and local governments have needs, policies, and priorities that are not always congruent at any particular time with either Federal historic preservation policy or other national interests. Therefore the Advisory Council on Historic Preservation, an independent Federal body, is dedicated to a balanced responsive aproach, considering historic preservation interests and these other interests.

In addition to providing advice to the President and Congress, the overall objectives of the Council are to work with each Federal agency to provide its comments reflecting the needs of historic preservation, and to carry out the Council's specific responsibilities to promote sound Federal policies toward preserving our heritage. A principal concern is to improve the effectiveness of Federal agencies in meeting their statutory historic preservation obligations, by eliminating duplicative efforts, improving the consistency of preservation polices, avoiding unnecessary expenditures of public funds and forestalling litigation against the Federal government. The following summary provides a comparison between the 1986 appropriations to date and the 1987 request (dollar amounts in thousands):

	FY 1986 enacted to date	1986 Adjusted Approp	FY 1987 Estimate	Dec. (-) from enacted
Salaries and Expenses ($)	1,575	1,507	1,417	-158
(FTE-T)	(36)	(35)	(25)	(-11)

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General Administration

The total request for General Administration includes rental payments to GSA, communications, utilities, printing, other services (contracting) supplies and equipment. These costs, estimated at $395,000 for FY 1986 and $358,000 for FY 1987, are shown in the Council Direction and Administration unit.

Authorization

P.L. 98-483 (16 U.S.C.§470t) authorized $2,500,000 annually for FY 1985 through FY 1989.

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Appropriation Language Sheet

Salaries and Expenses

For expenses made necessary by the Act establishing an Advisory Council on Historic Preservation, Public Law 89-665, [$1,575,000] $1,417,000 provided, that none of these funds shall be available for the compensation of Executive Level V, or higher positions.

(16 U.S.C. 470; 80 Stat. 915
Department of the Interior and Related
Agencies Appropriations Act, 1986, as
included in Public Law 99-190.)

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APPROPRIATION: SALARIES AND EXPENSES

Summary of Requirements

	(dollar amounts in thousands)			
	FTE/T	Amount	FTE/T	Amount
Appropriation currently available, 1986	---	---	36	1,575
P.L. 99-177 Reduction			-	-68
Adjusted Appropriation, 1986			36	1,507
Base Adjustments:				
Adjustment for 1986 impact of P.L. 99-177		+68		
1987 Base Budget			36	+68 1,575

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Comparison by Subactivities

	1985 Actual		1986 Enacted to Date		PL 99-177 Reduction		1986 Adjusted Appropriation		1987 Base		1987 Est.		Inc(-)from 1986 App'n		Inc(-)from 1986 Adjust		Inc(-)from 1987 Base	
	FTE	Amt	FTE	Amt	FTE	Amt	FTE	Amt	FTE	Amt	FTE	Amt	FTE	Amt	FTE	Amt	FTE	Amt
Council Direction	14	943	14	960	-	36	14	924	14	960	10	842	-4	-118	-4	-82	-4	-118
Cultural Resource Preservation	18	603	22	615	-	32	22	583	22	615	15	575	-7	-40	-7	-8	-7	-40
(General Administration)	-	(391)	-	(395)	-	(4)	-	(391)	-	(395)	-	(358)	-	(-37)	-	(-33)	-	(-37)
Total Requirements	32	1,546	36	1,575	-	68	36	1,507	36	1,575	25	1,417	-11	-158	-11	-90	-11	-158

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Justification of Program and Performance

Activity: COUNCIL OPERATIONS

Program Elements	1986 Approp. Enacted	1987 Adjusted Approp.	1987 Base	1987 Estimate	Inc(-) from 1986	Inc (-) from Base
Council Direction ($)	960	924	960	842	-118	-118
(FTE-T)	(14)	(14)	(14)	(10)	(-4)	(-4)
Cultural Resource Preservation ($)	615	583	615	575	-40	-40
(FTE-T)	(22)	(22)	(22)	(15)	(-7)	(-7)
Total Requirements($)	1,575	1,507	1,575	1,417	-158	-158
(FTE-T)	(36)	(36)	(36)	(25)	(-11)	(-11)

Authorization

16 U.S.C. 470 — P.L. 98-483 authorized $2.5 million annually for FY 1985 through FY 1989.

Gramm - Rudman - Hollings Impact

1986 Enacted to Date	PL-99-177 Reduction	1986 Adjusted Appropriation
1,575	-68	1,507

As a result of the $68 thousand P.L. 99-177 reduction travel will be reduced by one-fourth, purchase of supplies will be deferred, and 3 staff positions will be eliminated.

COUNCIL DIRECTION

This unit contains the Council Members, the Executive Director, the Deputy Executive Director and General Counsel, Policy, Program Development, Publications and Administration including the Word Processing Center. This unit directs and supports the work of the Council toward meeting its stated objectives.

Objectives.

- Promote the development of programs, policies and recommendations concerning historic preservation by utilizing the expertise of the Council Members;
- Carry out these programs, policies and recommendations through the administrative and legislative processes and disseminate advice and guidance to Federal agencies, State and local governments, private organizations and individuals;

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- Provide oversight and direction to the Council staff;
- Provide legal services to the Council members, Chairman, Executive Director and staff;
- Gather and organize material necessary for the Council to report annually to the President and the Congress on the current status and emerging trends of the national historic preservation program, and make assessments and recommendations concerning the adequacy of Federal, State, local and private sector historic preservation programs;
- Produce and make available reports of the Council on policy recommendations, preservation problems, analyses of issues, and preservation standards and guidelines;
- In cooperation with the General Services Administration Training Center, improve and administer training courses dealing with the Council operations and Federal agency review and preservation functions;
- Respond to public information requests and provide editing, design, and production services to all units of the Council; and
- Provide financial, administrative and support services to the Council and its staff.

- Most of these objectives do not yield readily to quantification.

Program highlights, progress in achieving objectives and accomplishments.

The Council membership initiates the Council's basic program activities, establishes policies and oversees the conduct of Council actions. The Council normally convenes quarterly in Washington, DC. It may meet at other times, particularly when a Federal undertaking affecting historic properties requires comment by the full membership.

The Chairman may also convene unassembled meetings to obtain Council action on important issues. Members participate in the meetings and in a flexible subcommittee structure. Panels of Council members may meet to formulate comments on Section 106 cases several times a year. Task forces and committees of members are often formed by the Chairman to address particular matters.

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On the average, 3 such subgroups are at work at any given time during the year; this past year only one convened to advise the Chairman regarding a foreclosure of the Council's opportunity to comment on a redevelopment project in Baltimore. A task force dealing with the question of Section 106 regulations met several times, while new task forces were established on training and assessing the achievements of 20 years of the National Historic Preservation Act as the basis for the Council's 1986 Annual Report. The full Council commented on the proposed completion of the Long Beach Freeway and its impact on historic properties in South Pasadena, California. This was the only Section 106 case to reach the full Council.

Executive leadership of the Council is provided by the Chairman who works closely with the Executive Director and the Deputy Executive Director. Telephone conversation occurs almost daily and the Chairman reviews all important correspondence and all agreements with Federal agencies; these agreements are effective only after her ratification. The Council's day-to-day work is carried out by the Executive Director and staff under the Chairman's direction. Work involves extensive contacts with all branches of the Federal government, with State and local governments, with businesses and organizations and with the public. The Council Direction unit provides administrative services (personnel, budget, finance, procurement, travel, etc.) with support from the Department of Interior on a reimbursable basis. These services also include all support for the Cultural Resource Preservation unit. Rent, communications, printing, other services (contracting), supplies, and equipment for the entire Council operation are reflected as administrative costs in this unit. The Office of General Counsel provides legal services to the Council and staff, handles the Council's legislative activities, and coordinates Council participation in lawsuits with the Department of Justice. The General Counsel also serves as Deputy Executive Director.

During FY 1985 the Council Direction unit continued work on improvements in the Section 106 process, which accounts for the major portion of the Council's program activities. In FY 1983, operational adjustments within the Council's control were implemented and FY 1984 witnessed significant improvements in the efficiency of the review of Federal undertakings. A major overhaul of the Section 106 regulations, which began in 1981, appeared to be reaching fruition late in the fiscal year. Proposed revised regulations were published for public comment on October 14, 1985 and final regulations are anticipated to be in place by the beginning of FY 1987.

The Council Direction unit conducts a variety of program activites, pursuant to the Council's general advisory authorities of Section 202 (a), that are designed to improve the effectiveness of the national historic preservation program. Carrying out these activities involves the members, individually and in groups, working closely with the staff and other agencies and organizations.

A major undertaking of the Council members in FY 1984 was the development of a variety of program initiatives to carry out the Council's statutory charges in FY 1985. Substantial progress was made in implementing these new program activities:

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1. Establish an informal communication network with agency historic preservation officers that involves the sharing of information. An initial mailing to Agency Historic Preservation Officers and State Historic Preservation Officers conveyed a draft set of guidelines for preparing archeological survey reports. Subsequent actions have included circulation of draft guidelines for considering cultural values in the Section 106 process and a briefing for Federal agencies on proposed revisions to the regulations.

2. Expansion of the Council training program by tailoring courses to specific agency needs. The Council's successful two-day training program, "Introduction to Federal Projects and Historic Preservation Law," has been adapted in a number of ways to better meet specific agency information needs. Six principal user agencies were identified as potential participants in an expanded training program. These agencies are Army, Army Corps of Engineers, Navy, DOI Fish and Wildlife Service, DOI National Park Service, and HUD.

   Plans are underway for an extensive series of courses, jointly sponsored with the Department of Housing and Urban Development, to provide training for Community Development Block Grant city officials. These three-day courses, which will serve every HUD region, will cover the full range of historic preservation duties, including but not limited to Section 106 review.

   In addition, the Council has offered extensive assistance to other Federal agencies who are preparing training materials related to the preservation of historic properties. These include the Army, the USDA Soil Conservation Service, and the National Park Service.

   A Council Task Force has recently been appointed to oversee the expansion and further development of the Council's successful training program.

3. Development of a preservation awards program. After completing an extensive survey of Presidential awards programs of all types, the Council endorsed a proposal to create the Presidential Historic Preservation Awards Program, recognizing excellence in federally assisted historic preservation. There is currently no government wide preservation awards program. Eligible entries would include any federally assisted or federally regulated project, program, or process resulting in the preservation or enhancement of historic properties. A select number of entrants would be recommended for Presidential Historic Preservation Awards; entrants so recommended but not chosen for Presidential awards would receive National Historic Preservation Awards.

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4. Development of new guidelines for State historic preservation legislation.
Through an Intergovernmental Personnel Act Exchange, the Council had the services of an attorney from New York State government to prepare a draft of legislative guidelines. Background research and preliminary drafting have been completed, but the project will be delayed until the Section 106 regulations revisions are in place. It is anticipated that the State guidelines can be very useful in advancing some of the innovative features of the regulations.

5. Encouragement of increased U.S. participation in international cultural heritage activities. The Council actively participated in State Department's efforts to find alternatives for U.S. involvement in cultural heritage activities in the wake of the withdrawal from UNESCO.

As this effort has not borne fruit, the Council is now exploring possible private sector initiatives to support worthwhile international activities.

A major initiative launched in FY 1985 is an assessment of the effectiveness of the 1966 National Historic Preservation Act. Designed to be the Council's 1986 Annual Report on the act, this comprehension overview will also contain recommendations to improve the national historic preservation program. A Council task force is guiding this effort. These activities have been conducted within current levels of funding and personnel. The projected funding level will require cutbacks in these areas.

The Office of General Counsel provided principal staff support to the Council's efforts to make comprehensive improvements to the Section 106 regulations. Also, the Office continued to coordinate with the Justice Department on lawsuits against Federal agencies alleging violations of Section 106. Legislatively, the major activities in FY 1985 have involved advising on legislation to protect historic shipwrecks and Olmsted landscapes, as well as continuing the Council's appropriations authorization after FY 1984. This latter action was consummated in P.L. 98-483, passed October 18, 1984.

The Council's two-day training course, "Introduction to Federal Projects and Historic Preservation Law," has prepared many officials to address the Section 106 review process efficiently and effectively. Since its inception in 1981, the course has been offered over 50 times and has trained more than 1,300 officials. During 1985, the course was offered 14 times, training more than 380 Federal, State and local officials. Special training, under HUD's joint sponsorship, is planned for 1986 to train Community Development city officials. The results of the training have been apparent in subsequent Section 106 case consultation: trainees are better equipped to meet their preservation responsibilities under Federal law, and can more easily and quickly complete Section 106 requirements.

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The training program has been particularly cost-effective since its inception. Offered through the ten Office of Personnel Management Training Centers since 1981, the Council's costs have been limited to curriculum development and staff coordination of the national aspects of the program, such as scheduling, target audiences and improvements in the system.

OPM has managed registration, logistics, and the operational cost of the course. For 1986, administration of the course has been transfered to joint sponsorship by the General Services Administration Training Center, which can offer the course at a reduced fee to participants, absorb somewhat more of the planning function, and continue to relieve the Council of most logistical and operational concerns. This arrangement has proved to be, and will assuredly continue to be, an exceedingly cost effective arrangement, given the Council's resources and the need to train many officials.

Council publications provide a significant contribution to the field of preservation knowledge. REPORT TO THE PRESIDENT AND CONGRESS 1984, prepared under statutory authority, received wide national distribution and acclaim. The report remains the only annual assessment of historic preservation across the U.S. The 1985 Report to the President and the Congress will include a discussion of the Historic Sites Act, its meaning and legacy, to mark the 50th anniversary of the passage of this pioneering legislation. A special report published by the Council during the year has also been well received, and has recently been made available for sale through the Government Printing Office. FEDERAL HISTORIC PRESERVATION CASE LAW reviews and summarizes every Federal court decision under the National Historic Preservation Act of 1966 from that date to the present. It will prove to be an invaluable resource for preservation professionals and laymen alike.

(dollars in thousands)

	FY 1987	FY 1987	
Request for 1987	Base	Estimate	Difference
$	960	842	-118
(FTE-T)	(14)	(10)	(-4)

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Distribution by object class

The object class detail for the requested $842,000 is as follows:

	FTE-T	Amount
Personnel Compensation	10	$409,000
Personnel benefits		40,000
Benefits for former Personnel		4,000
Travel & Transportation of persons		31,000
Rent		151,000
Other Rent, communications, and utilities		25,000
Printing		20,000
Other services		115,000
Supplies		20,000
Equipment		27,000
Total		$842,000

In addition to the staff for Council Direction and the Council members, administrative support costs for the entire organization are carried in this unit for ease of display and analysis.

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CULTURAL RESOURCE PRESERVATION

Authorization 16 U.S.C. 470:

Section 106 of the National Historic Preservation Act requires that Federal agencies take into account the effects of their undertakings on historic properties and afford the Council reasonable opportunity to comment on such undertakings. Sections 2 and 110(a), (b), (d), (f), and (g) of the Act set forth general standards by which the adequacy of an agency's efforts to take effects into account may be judged. Other sections of the Act, and other statutory authorities give the Council related review responsibilities (e.g., Sec. 110(f) and Sec. 202(a) (6) of the Act; Sec. 9(a) of the Mining in National Parks Act; and Sec. 110 of the Housing and Community Development Act).

Objectives

- Review Federal undertakings submitted for Council comment efficiently and effectively, and ensure that each such review is concluded by an appropriate rendering of Council comment;

- Give special attention to the cost-effectiveness of agency approaches to identifying historic properties and reducing adverse effects on them with the goal of effecting substantial savings to the government and to local and private sectors while ensuring that historic properties are adequately preserved; and

- Work with Federal agencies, State Historic Preservation Officers, local government, and the private sector to improve the programs by which historic properties are considered in planning Federal undertakings, with the goal of ensuring such effective planning on the part of all Federal agencies that Council participation in individual project review will become unnecessary on a long term basis.

Base program

Objective #1 - Section 106 case review

Section 106 of the National historic Preservation Act requires that Federal agencies "take into account" the effects of their undertakings on historic properties and that they afford the Council "a reasonable opportunity to comment" on such undertakings. In establishing a process for compliance with Section 106, the Council has combined these two responsibilities, making the rendering of Council comment an integral part of each agency's effort to take the effects of each undertaking into account. When adverse effects on historic properties are likely as the result of a Federal agency's action, the agency enters into a process of consultation with the State Historic Preservation Officer and the Council to ensure that a reasonable effort has been made to evaluate alternatives to preserve the historic property. In the great bulk of cases these discussions result either in resolution of the conflict between the agency's action and the

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preservation of historic properties, through the development of ways to avoid or mitigate the action's effects on the property, or in agreement among the consulting parties that the historic property must yield to project needs in the public interest. In either case, the parties' agreement is recorded in a Memorandum of Agreement. The undertaking then proceeds in accordance with the agreement reached. In those rare cases in which agreement is not reached, the Chairman either convenes the full Council or a panel of Council members to comment formally, after which the agency takes the comments of the Council into account as it proceeds.

Case review is handled by Historic Preservation Specialists, who are professionals in such disciplines as history, architecture, architectural history, archeology, and planning. They are assisted by Assistant Historic Preservation Specialists, generally graded at GS-7, who are often graduate students in preservation-related disciplines. At present, the Eastern Division of Project Review consists of seven Historic Preservation Specialists, one Assistant Specialist, and two clerical assistants, one of whom also serves as Administrative Assistant to the Director, Office of Cultural Resource Preservation. The Western Division consists of four Specialists, an Assistant, one full-time clerical assistant and one half-time clerical assistant. Each Division is supervised by a Division Chief, reporting to the Director, Office of Cultural Resource Preservation. The two Divisions are assisted as needed by a Senior Architect and a Senior Archeologist, the latter a collateral function of the Director.

In recent years, we have taken steps to distinguish between "routine" and "nonroutine" Section 106 reviews. A routine review is one involving relatively simple issues -- involving either effects that are relatively easy to avoid or mitigate, or properties about which there is little public concern, and which have little preservation potential -- while a nonroutine review is one involving unusual issues, properties of unusual significance, or with the potential for substantial controversy. Agencies are encouraged to work out the disposition of routine cases with the State Historic Preservation Officers, with minimum Council participation; Council review of the results of agency/SHPO consultation is designed to be completed within a few days. Special arrangements for "expedited memoranda of agreement" facilitate the review of such cases. Conversely, agencies are encouraged to contact the Council early in the process of developing an action that may require nonroutine review, so that maximum time and effort can be devoted to addressing the issues raised by the case. Such reviews naturally take longer than do routine reviews, the Council is a more active participant in the review, and the resulting agreement is likely to be more complex and complicated to reach.

Table 1 provides data on Section 106 reviews. It updates our 1985 estimate and compares it to our original projection. It also provides estimates for FY 1986 and 1987. Terms and categories are explained in the attachment to the table.

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TABLE 1: Planned Workload

INDIVIDUAL CASES REVIEWED UNDER

SECTION 106

	Orig. 1985 estimate	Actual 1985 case load	1986 estimate	1987 estimate	Incr.(+) or Decr.(-)
1. Carryover from previous fiscal year	299	300	300	300	-
2. New projects received	3,750	3,791	3,800	3,900	+100
3. Projects screened	1,600	1,600	1,700	2,500	+800
4. Projects Reviewed	2,199	2,491	2,400	1,700	-700
a. Advice offered	1,149	1,150	950	200	-750
b. Substantial review conducted	1,050	1,341	1,450	1,500	+50
(1) No Adverse Effect, unconditional	700	601	600	550	-50
(2) No Adverse Effect, conditional	100	122	150	70	-80
(3) Memoranda of Agreement	245	318	395	275	-120
(4) Referred to Chairman	5	0	5	5	-
5. Carryover to next fiscal year:	250	300	300	600	+300
6. Post-agreement review	100	200	300	50	-250

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ATTACHMENT TO TABLE 1: EXPLANATION OF TERMS

Aside from terms explained in the text, the following terms are used in Table 1.

CARRYOVER FROM PREVIOUS FISCAL YEAR.
Cases of a [illegible] kinds that are in process at the beginning of the fiscal year.

NEW PROJECT NOTICES. Projects of which the Council becomes aware during the fiscal year.

PROJECTS SCREENED. Projects which, upon initial screening, are not acted because staff resources are insufficient to review them in detail. They are activated for further review upon citizen inquiry, State or local government request, or notification from the responsible agency.

PROJECTS REVIEWED. Cases subjected to some form of review which break down as follows:

Advice offered. The Council is notified of a project that will or may affect historic and cultural properties. The Council offers general advice to the responsible agency about steps to take to ensure adequate consideration of such properties. This typically brings the agency into consultation with the SHPO and may result in project modifications to avoid damage to historic properties, further studies, or a subsequent request for Council comment. Although more discussion and exchange of correspondence often takes place, this does not results in a formal request for Council comment within the fiscal year.

Substantial review conducted. Cases in which the Council's comments are sought and rendered in one of the following ways.

Determination of No Adverse Effect, unconditional. Having consulted with the SHPO, an agency determines that its undertaking will have no adverse effect on any property included in or eligible for the National Register. Upon review, the Council concurs in the determination.

Determination of No Adverse Effect, conditional. An agency issues a no adverse effect determination in a case where independent evidence indicates that adverse effects will occur. The Council advises the agency that it will accept its determination if stated conditions are met, such as archeological salvage work or application of professional standards in rehabilitating a building. The agency accepts the condition.

Requests for Council Comment leading to Memorandum of Agreement. Having consulted with the SHPO, the agency determines that its undertaking will have an adverse effect on a property included in or eligible for the National Register and begins the consultation process. This process may include onsite inspections and information meetings. The result is a Memorandum of Agreement signed by the agency, the SHPO, and the Chairman on behalf of the Council (and sometimes concurred in by other parties) specifying what steps will be taken to avoid or reduce the adverse effect.

Requests requiring referral to the Chairman. When it proves impossible to reach a Memorandum of Agreement, the case is referred to the Chairman. She may accept the adverse effect, set up a panel of Council members to review and render comment on the case, or refer the matter to the full Council for consideration. In certain cases, particularly those in which agency action has foreclosed the Council's opportunity to comment meaningfully (e.g., by demolishing a building before seeking comment), the Chairman may decline to have the Council consider the matter further.

CARRYOVER TO NEXT FISCAL YEAR. Cases on which review is in progress at the end of the fiscal year.

POST-AGREEMENT REVIEW. Often a Federal agency, in reaching agreement on measures to avoid or mitigate adverse effects on a historic property, will seek or agree to Council review of substantive documents produced pursuant to the agreement, for example, architectural plans and specifications and archeological data recovery plans. Council participation occurs pursuant to Memorandum of Agreement or Determination of No Adverse Effect. These usually involve substantive review of plans and specifications for construction altering a historic building, or of plans for the excavation of a particular archeological site or sites.

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Trends in Section 106 Review

Trends apparent during this fiscal year include the following:

1. More Memoranda of Agreement

FY 1985 has seen an overall increase in the submission of projects requiring Memoranda of Agreement. Many of these have been of a relatively routine nature, so it has been possible to absorb the increased workload, but devoting more staff time to substantial review has necessarily caused a decrease in the level of other work, for example, in "advice offered" on projects (line 4.g., Table 1).

The reason for the increase is not altogether clear. Though an increasing level of project review has been the rule throughout the Council's history, several factors had led us to expect a balancing decrease during the last fiscal year. These factors include the increasing number of Programmatic Memoranda of Agreement in place, which should reduce the number of individual projects submitted for review, and the decrease in Federal construction projects resulting from the President's efforts to reduce the cost of government. The fact that these decreases have not materialized, or have been more than matched by increases, suggests that some other factors are at work to bring in more and more projects for review. One may be the Council's training program, which has acquainted large numbers of Federal, State and local officials with Section 106, making it easier for them to comply with the process. Another may be that steps taken so far to streamline the process, such as expedited agreements, are speeding projects through the process so that we are seeing them earlier.

2. Success of Expedited Agreements

Use of the "expedited Memorandum of Agreement" approach, first offered in 1982, has increased during this fiscal year, reflecting an increase in relatively routine cases and growing comfort on the part of agencies and SHPOs in use of the process with minimum Council involvement. Increasing use of the Council's "Manual of Mitigation Measures" (MOMM), published in 1982, has facilitated this trend; the MOMM contains standard-language stipulations for expedited Memoranda of Agreement addressing commonly occurring issues, whose use helps guarantee quick preparation of legally sufficient agreements.

3. Automation Increases Productivity

The handling of paperwork on routine cases in the Council offices is now almost entirely automated, though some significant gaps remain in our word processing/ADP system, particularly in the Western Division of Project Review. Automated data processing makes it possible for supervisors to review briefing material and agreement drafts on-screen rather than in hard copy, greatly speeding case processing. In emergency cases, review has been completed in as little as 24 hours from initial drafting of an agreement to ratification by the Chairman, and ten-day turn-arounds are common.

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4. Complex Cases Continue to Dominate

While the use of expedited Memoranda of Agreement to process routine cases has increased, the number of non-routine, complicated cases has remained somewhat stable, and much time has been devoted to their review. Such cases have included:

- A power transmission line running some 200 miles through New York State, with visual impacts on many historic buildings and landscapes;
- A crude oil pipeline running from the California coast to central Texas, affecting many archeological sites;
- Construction of a massive new headquarters building for the Army's Training and Doctrine Command at historic Fortress Monroe, Virginia;
- A complex of highway projects in the vicinity of Louisville, Kentucky, with effects on a variety of historic farmsites and archeological resources;
- Construction of a large modern building in the Pioneer Square Historic District in Seattle, Washington;
- Conduct of a major mechanized military exercise on lands of the White Sands Missile Range thought likely to contain many important archeological sites;
- Modification of structures associated with World War II and space exploration, designated this year as National Historic Landmarks by the Secretary of the Interior;
- Construction of a major paper mill in an area of high archeological sensitivity on the Washington State coast;
- Reburial of vandalized human skeletal remains in consultation with concerned American Indian groups in Illinois, South Dakota, and Colorado, and
- Establishing a route for a highway improvement project through a group of sensitive historic districts in New Hampshire.

5. Post-Agreement Review Increases

As reported last year, review of plans, specifications, archeological data recovery programs, and other documents produced as a result of previous Memoranda of Agreement and Programmatic Memoranda of Agreement has increased over the last few years. This trend continued dramatically during fiscal year 1985 with no end in sight.

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6. Increase of Military Cases

An agency-specific trend notable this year has been an increase in undertakings submitted by military agencies, notably the Army. Undertakings involved include major renovation and in some cases demolition of historic buildings, construction of new buildings in historic military districts, and the conduct of training exercises in areas rich in archeological resources. Several factors seem to have combined to produce this trend, including the expansion of military construction and training activities, improved preservation procedures in the military, and directives from Congress, in connection with the Army's annual appropriation bills, to eliminate many World War II-era structures and to reduce the cost of maintaining older military housing.

The increase in military casework has required the allocation of substantial amounts of senior professional time, particularly by the Senior Architect and Director, Office of Cultural Resource Preservation.

Effectiveness of Action

The extent to which the Council's actions are effective in meeting the objective of Section 106 review can be measured in several ways. In the past we have tried to estimate the number of historic properties "saved" or otherwise treated positively as the result of Section 106 review, and to estimate the costs resulting from the review, vis-a-vis its financial benefits. Both measures have resulted in such crude figures that we have abandoned their use. Other measures are more subject to quantification; these include the simple number of cases subjected to review, the time involved in reviewing each case, and the percentage of cases in which a mutually satisfactory agreement was reached as a result of review.

The total caseload of projects reviewed in detail under Section 106 rose from 777 in 1982 to 1,279 in 1983 (including 240 special reviews arising from the Jobs Act, Public Law 96-8), 1,061 in 1984 (including 38 P.L. 96-8 reviews), and 1,341 in 1985, including no reviews stimulated by special legislation like P.L. 96-8 (Table 1). Only those cases requiring substantial review are included here; projects "screened" and projects on which advice was offered but the Council's comments were not sought are not included. These figures indicate the total volume of projects requiring substantial review flowing through the Council in the course of the year; it does not, of course, measure the effectiveness of review per se.

An analysis of cases to determine the efficiency in review shows an increase in the speed with which cases are processed once they are submitted to the Council. About 95% of all case review was completed within one month after receipt of documents. The residual 5% of cases represent those that are particularly complicated or that involved substantial changes in project design -- sometimes stimulated by historic preservation concerns, sometimes by other factors -- after formal submission of documentation. The increase in efficiency seems to be largely attributable to two factors: the increased use of "expedited" Memoranda of Agreement by agencies and SHPOs, and the Council's ADP system.

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The best indicator of effectiveness is that thus far this year, 100% of case resolutions have been satisfactory to all parties, as reflected by the fact that no new cases have had to be referred to the Chairman for consideration by the full Council or a panel. This is a marginal improvement of .5% over last year's figure. One case previously considered by a Council panel, the completion of the Long Beach Freeway through Pasadena and South Pasadena, California, was considered by the full Council during this fiscal year, but the failure to agree actually occurred during the previous year.

The frequency of "post-agreement" review has increased steadily over the last few years. More agreements have been reached at the program level or at early stages in project planning requiring more detailed review of specific plans and specifications as the projects progress. The number of post-agreement reviews has more than doubled since 1983, and we anticipate a five-fold increase by the end of 1986. We have been able to maintain a satisfactory level of effectiveness in post-agreement review thus far, however we are alert to the possibility that effectiveness could begin to erode as the number of needed reviews increases.

The Need for Early Involvement

An area that has become increasingly bothersome over the last few years is the category of project notices designated in Table 1 as "screened." These typically include environmental assessments, impact statements, permit notices, and other documents that cannot effectively be reviewed and responded to because of insufficient staff resources. When advice is not offered in such cases, we are essentially relying on the agency producing the notice to carry out its responsibilities under Section 106 without Council guidance. With many agencies this reliance is entirely justified. With increasing frequency preservation problems have developed late in the project planning process because agencies did not receive early advice about how to meet Section 106 responsibilities. On several occasions so far this year agencies have waited so long before seeking Council comment -- in some cases, the projects involved were under construction -- that little opportunity remained for the Council to make useful comments. Although some of these situations arise every year, their frequency seems to be on the increase. More vigorous early contact with agencies by the Council, in other words, less "screening," would probably reduce the frequency of problems late in project planning. Obviously when through the "screening" process we elect not to contact an agency early in the process of planning a project that may damage historic properties, we forego an opportunity to ensure that the agency achieves timely compliance with Section 106. We would like to reduce the number of projects "screened" each year, but presently lack the personnel to do so.

Effect of Proposed Regulation Changes

The Council has proposed changes in its regulations, that have been published for public comment. If regulations along the lines of those proposed are put into place, several changes will result in the nature of the Council's workload.

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The separate categories No Adverse Effect, unconditional, No Adverse Effect, conditional, and Memorandum of Agreement would be combined into a single category of project review, in which the responsible Federal agency, State Historic Preservation Officer, other applicable parties, and occasionally the Council would consult to achieve agreement on a course of action; the resulting agreement would then be sent to the Council for review. In essence, this would mean that all reviews would be handled in the way No Adverse Effect determinations are handled today. Since this system will be easier for agencies to work with than is the current system, one result of adopting it may be a net increase in the number of projects brought to the Council for review. On the other hand, certain definitional changes within the regulations, and easier access to programmatic approaches to review provided by the new approach, may reduce workload somewhat. In any event it is anticipated that the new regulations, once they have settled in and become understood, will enhance the overall efficiency of the system.

Effect of Requested Budget Level

Table 1 identifies the Section 106 workload at the requested budget level in terms of the efficiency and effectiveness of the review process. It assumes a reduction in force of approximately three professional positions and one clerical position in the Eastern Division of Project Review and a reduction of approximately two professionals in the Western Division. In summary, the following effects are expected.

1. The current level of efficiency in project review will deteriorate substantially.

2. Post-agreement review will be substantially curtailed.

3. The number of project notices "screened" will increase.

4. It will seldom be possible to provide advice to agencies in the absence of a formal request for Council comment.

Objective #2 Cost-Effectiveness Review

Action taken to meet objective: This objective has become important over the last few years as the result both of the Council's perception that the costs of some actions taken by Federal agencies to identify and preserve historic properties were excessive and of studies by the General Accounting Office questioning the costs of particular preservation projects and preservation programs in general. Particular attention has been given to the costs of archeological surveys and data recovery projects. At present, cost-effectiveness review takes place on an opportunistic basis, both within and outside the Section 106 case review process. Where it appears that a preservation activity proposed during Section 106 review may be

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unduly costly, special efforts are made to review pertinent documents and explore alternatives with program agencies. Memoranda of Agreement and similar documents often include provision for the Council to review archeological data recovery plans and similar projects proposals developed after the basic Section 106 review is complete. During this post-agreement review it is often possible to identify potential cost-savings and recommend these to the sponsor agency. Finally, the Council occasionally becomes aware of a project that has not yet been submitted for Council comment, on which very high preservation-related costs are being incurred (usually related to identification efforts); in such cases the Council requests the opportunity to review the activity and make recommendations. Recent, current, and ongoing cost-effectiveness reviews are set forth in Table 2.

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Table 2: RECENT, CURRENT, AND ONGOING COST-EFFECTIVENESS REVIEWS

Case: Boston Central Artery North Area, Charlestown, Massachusetts (FHWA)

Circumstance: Archeological data recovery. Carefully focussed research design developed through consultation permitted selection of less expensive proposal for work.

Cost of Orig. Proposal: ca. $2 million (est.)

Cost of Agreed Work: ca. $1 million

Savings: ca. $1 million

Case: Smith Bay Vista Resort Hotel, St. Thomas, Virgin Islands (UDAG)

Circumstance: Project design reconfiguration; archeological data recovery. Original plan called for substantial disturbance of archeological deposits, requiring expensive data recovery. Consultation led to revision of the project to reduce disturbance and require scaled-down data recovery.

Cost of Orig. Proposal: ca. $25,000 (est.)

Cost of Agreed Work: ca. $10,000 (est.)

Savings: ca. $15,000

Case: Arthur's Bakery, Baltimore, Maryland UMTA

Circumstance: Scale-down of preservation plan. Plan presented to Council for review involved more elaborate preservation measures than required by the nature of the building and the circumstances; consultation resulted in a scaled-down proposal

Cost of Orig. Proposal: $300,000.00

Cost of agreed work: $50,000.00

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Saving: $250,000.00

Case: Camp Wahsega, Lumpkin County, Georgia (USDA:Forest Service)

Circumstance: Agreement to donate buildings to non-federal organization, reducing maintenance costs. Forest service maintenance of buildings, leased at reduced rate another organization, was a constant drain on Forest Service financial resources. Consultation led to agreement that the buildings would be donated to the other organization, which would maintain them at its own expense in a manner consistent with their historical character.

Yearly savings to FS: app. $5,000.00 per yr.

Case: Excavation of Duwamish Archeological Site in sewer right-of-way, Seattle, Washington (EPA)

Circumstance: Archeological data recovery. Original proposal was very expensive; Council review of the proposal indicated that many of the operations proposed were unjustified by the research value of the site. Consultation led to a reduced, more carefully focussed data recovery plan.

Cost of Orig. Proposal: $2,000,000

Cost of agreed work: $1,000,000

Savings: $1,000,000

Case: Susitna Hydroelectric Project, Alaska (FERC/Alaska Power Authority)

Circumstance: Archeological data recovery. Extremely expensive proposed work to be done as a condition of receipt of FERC certification.

Cost of Original Proposal: $3,587,000 plus logistical support.

Cost of agreed work: Unknown as yet. Council has questioned projected cost, which amounts to over $11,000 per archeological site, assuming all sites are excavated. Consultation is scheduled for spring, 1985.

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Trends in Cost-Effectiveness Review

Cost-effectiveness review has continued to occur at a relatively low level, happening only when particular "targets of opportunity" have presented themselves. This is a function of staffing levels and increasing workload on basic Section 106 review activities. We simply lack the staff time to devote much effort to cost-effectiveness review.

Effect of Requested Budget Level: The requested budget level will not allow us to continue cost-effectiveness review.

Objective #3: Program Improvement

The Council uses several mechanisms for program improvement:

1. Programmatic Memoranda of Agreement, in which the Council, one or more SHPOs, and one or more agencies agree on program for treating historic properties in connection with some large Federal activity; this program stands in place of application of the regulations and is tailored to the needs of the agency, the State(s), and the property types in question.

2. Counterpart regulations and internal agency procedures, in which the Council and an agency consult to develop an agency's internal preservation policies and systems, and embody these in some kind of guidance appropriate to the agency.

3. Council guidance, in which the Council publishes non-binding advisory guidelines for use by agencies and others, authorized by Section 202(a) of the Act and Section 80.14 of the Council's regulations.

4. Participation in agency programs pursuant to Programmatic Memoranda of Agreement. Such participation usually involves review of general plans, such as management plans for National Parks; they also sometimes feature mediation between a Federal agency and a State Historic Preservation Officer over the appropriateness of the preservation provisions contained in such plans, and review of specific items such as archeological salvage plans and budgets.

5. Participation in workshops and training programs carried out by or for agency officials, SHPOs, and others. The Office of Cultural Resource Preservation regularly provides either teachers or resource personnel to the Council's training courses, and also provides participants in workshops and training activities carried out by other agencies. This year we have also initiated an effort to carry on informal workshops with State Historic Preservation Officers, regional groups of SHPOs and agency officials, and professional organizations whose members participate in Section 106-related work.

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6. Periodic transmittal of memoranda to agencies and SHPOs advising them of developing problems or opportunities in preservation program development, approaches taken to particular problems and issues by particular agencies or states, etc.

7. Miscellaneous activities, currently including:

* a cooperative review of procedures for compliance with Section 106 by the National Forests of the Southeast Region, in consultation with the Forest Service;

* a study of how Federal agencies procure professional services in preservation-related work (eg. archeological research) as a basis for recommending approaches that will improve the quality of the work obtained;

* work with the Department of the Army on the evaluation of ways to reduce the costs of maintaining historic military housing, and

* cooperative work with Federal agencies and with national archeological and American Indian organizations concerning treatment and disposal of human skeletal remains exhumed during archeological excavations.

Table 3 shows the number of Programmatic Memoranda of Agreement, Counterpart Regulations, and Council guidance documents (a) originally projected to be produced during 1985, (b) actually produced during FY 1985, and (c) projected to be produced during FY 1986 and FY 1987. Table 3 also shows the projected numbers of reviews conducted pursuant to Programmatic Memoranda of Agreement.

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TABLE 3: Program Review Products

	1985 Orig. estimate	1985 Actual Activity	1986 estimate	1987 estimate	Difference
Counterpart Regulations Initiated	0	0	0	0	-
Published	1	0	0	0	-
Programmatic Memoranda of Agreement Initiated	15	20	25	10	-15
Concluded	15	16	15	15	-
Council Guidance Documents Initiated	3	3	3	0	-3
Concluded	3	0	2	15	-1
Substantive Review pursuant to Programmatic Memoranda of Agreement	50	80	100	30	-70

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Trends in Program Improvement

No counterpart regulations were produced during FY 1985, and none are expected in the near future. As the current proposed revisions to the Council's regulations would eliminate counterpart regulations, this technique may cease to be used.

Programmatic Memoranda of Agreement are being developed and executed in increasing numbers, dealing with entire programs (eg. leasing of lighthouses by the Coast Guard, approval of railroad abandonments by the Interstate Commerce Commission), with land management (eg. management of all Army lands in Alaska, management of all lands under the jurisdiction of the Bureau of Land Management in California), with individual large historic properties and areas containing historic properties (eg. Fort Leavenworth, Kansas), and with large projects (eg. the Calaron-All American Pipeline from California to Texas).

Preparation of guidance documents has not been concluded at the rate anticipated. Though several are complete in draft form, staff time has not been available to complete them. Completion of others has been postponed pending changes in the Council's regulations. Guidance documents currently in progress include:

Treatment of Archeological Properties: a Handbook (draft prepared and in interim use. Revisions in progress.)

Guidelines for the Consideration of Traditional Cultural Values in Historic Preservation Review (draft is being reviewed by agencies, States, and public.

Preservation Planning in Context (draft prepared, no formal review as yet);

Guidelines for Integrating Compliance with Section 106 of the National Historic Preservation Act with Onshore Oil and Gas Order No. 1 (draft prepared, in use on interim basis while revisions made in response to comments);

Guidelines for Historic Preservation by Agencies of the U.S. Government Operating in Micronesia (draft in preparation);

Substantive review pursuant to Programmatic Memoranda of Agreement has continued to increase, and is expected to do so in 1986 as well.

Participation in workshops and other training activities is becoming an increasingly important part of the work of the Office of Cultural Resource Preservation, and is expected to gain in importance, particularly if and when the new regulations are in place, since the new regulations would emphasize resolution of problems at the State/agency level with Council monitoring, increasing the need for SHPO and agency official training.

Effect of Requested Budget Level

The requested budget level will require substantial reduction of program improvement activities. Primary attention will continue to be devoted to the use of Programmatic Memoranda of Agreement, but the anticipated reduction in force will not permit aggressive pursuit of such agreements. We will be unable to produce guidance documents and counterpart regulations will continue to be inactive. We hope to be able to continue our participation in workshops and other training activities for agency and SHPO staffs.

(dollars in thousands)

Request for 1987	FY 1987 Base	FY 1987 estimate	Difference
$	615	575	-40
(FTE-T)	(22)	(15)	(-7)

Distribution by object class

The object class detail for the requested $575,000 is as follows:

	FTE-T	Amount
Personnel compensation	(15)	$490,000
Personnel benefits		49,000
Benefits for former Personnel		5,000
Travel & Transportation of persons		31,000
Total		$575,000

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ADVISORY COUNCIL ON HISTORIC PRESERVATION
Summary of Requirements by Object Class
(Dollar amounts in thousands)

Appropriation: Salaries and Expenses

Object Class		1986 Base FTE	1986 Base Amount	1987 Estimate FTE	1987 Estimate Amount	Inc. (+) or Dec.(-) FTE	Inc. (+) or Dec.(-) Amount
11	Personnel compensation:						
11.1	Permanent positions - FTE-P. . . .	20	$ 710	20	$ 750	-	+ 40
11.3	Positions other than permanent . .	16	285	5	144	-11	-141
11.5	Other personnel compensation	-	5	-	5	-	-
	Total personnel compensation	36	1,000	25	899	-11	-101
	Other Objects						
12.1	Personnel benefits		100		89		- 11
13.0	Benefits for former personnel	-			9		+ 9
21.0	Travel & transportation of persons .		80		62		- 18
23.1	Standard level user charges		186		151		- 35
23.2	Other rent, comm., & utilities . . .		30		25		- 5
24.0	Printing and reproduction		24		20		- 4
25.0	Other services		115		115		-
26.0	Supplies and materials		24		20		- 4
31.0	Equipment.		16		27		+ 11
	Total requirements		1,575		1,417		- 158

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STANDARD FORM 300
July 1984, Bureau of the Budget
Circular No. A-11, Revised.

ADVISORY COUNCIL ON HISTORIC PRESERVATION
SALARIES AND EXPENSES
PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

Identification code 95-2300-0-1-303	FY 85 actual	FY 86 estimate	FY 87 estimate
Program by activities:			
00.0101 Direct program	1,546	1,575	1,417
01.0101 Reimbursable program	49	150	150
10.0001 Total obligations	1,595	1,725	1,567
Financing:			
11.0001 Offsetting collections from: Federal funds	-49	-150	-150
25.0001 Unobligated balance lapsing	--	--	--
39.0001 Budget authority	1,546	1,575	1,417
Budget authority:			
40.0001 Appropriation	1,546	1,585	1,417
40.0002 Reduction pursuant to P.L. 99-190	--	-10	--
43.0001 Appropriation (adjusted)	1,546	1,575	1,417
Relation of obligations to outlays:			
71.0001 Obligations incurred, net	1,546	1,575	1,417
72.4001 Obligated balance, start of year	175	127	112
72.4001 Obligated balance, end of year	-127	-112	-107
77.0001 Adjustments in expired accounts	--	--	--
90.0001 Outlays	1,595	1,590	1,422

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ADVISORY COUNCIL ON HISTORIC PRESERVATION

PROGRAM AND PERFORMANCE

The Council provides independent advice to the President and the Congress relating to the National Historic Preservation Program and protects significant historic properties threatened by Federal undertakings.

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STANDARD FORM 300

ADVISORY COUNCIL ON HISTORIC PRESERVATION
SALARIES AND EXPENSES
OBJECT CLASSIFICATION (IN THOUSANDS OF DOLLARS)

Identification code 95-2300-0-1-303	'85 actual	'86 estimate	'87 estimate
Direct obligations:			
Personnel compensation:			
111.101 Full-time permanent	684	710	750
111.301 Positions other than full-time permanent	297	285	144
111.501 Other personnel compensation	6	5	5
111.901 Total personnel compensation	987	1,000	899
Personnel benefits:			
112.101 Civilian	98	100	89
113.001 Benefits for former personnel	---	---	9
121.001 Travel and transportation of persons	80	80	62
123.101 Standard level user charges	165	186	151
123.201 Communications, utilities, and other rent	28	30	25
124.001 Printing and reproduction	25	24	20
125.001 Other services	137	115	115
126.001 Supplies and materials	22	24	20
131.001 Equipment	3	16	27
190.001 Subtotal, direct obligations:	1,546	1,575	1,417
299.901 Reimbursable obligations:	49	150	150
999.901 Total obligations	1,595	1,725	1,567
Personnel Summary			
Direct:			
Total number of full-time permanent positions	20	20	21
Total compensable work years	33	35	25
Reimbursable:			
Total number of full-time permanent positions	1	1	--
Total compensable work years	1	1	--

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ADVISORY COUNCIL ON HISTORIC PRESERVATION
SALARIES AND EXPENSES
SCHEDULE OF PERMANENT POSITIONS

	1985 actual	1986 estimate	1987 estimate
ES-6	1	1	1
ES-1	1	1	1
subtotal	2	2	2
GS/GM-15	1	1	1
GS/GM-14	2	2	2
GS/GM-13	5	6	6
subtotal	8	9	9
GS-12	1	0	0
GS-11	6	6	6
GS-9	2	2	2
GS-8	1	1	1
GS-7	1	1	1
subtotal	11	10	10
Total permanent positions	21	21	21
Unfilled positions, end of year	0	0	0
Total permanent employment, end of year	21	21	21

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STANDARD FORM 300 ADVISORY COUNCIL ON HISTORIC PRESERVATION
DONATIONS (TRUST FUND)
PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

Identification code 95-8298-0-7-303	FY 85 actual	FY 86 estimate	FY 87 estimate
Program by activities:			
10.0001 Total obligations (object class 25.0)	2	5	5
Financing:			
60.0001 Budget authority (appropriation) (Permanent, indefinite)	2	5	5
Relation of obligations to outlays:			
71.0001 Obligations incurred, net	2	5	5
72.4001 Obligated balance, start of year	-	1	-
74.4001 Obligated balance, end of year	-1	-	-
90.0001 Outlays	1	6	5

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ADVISORY COUNCIL ON HISTORIC PRESERVATION

PROGRAM AND PERFORMANCE

The Chairman of the Advisory Council on Historic Preservation accepts and uses donated moneys for purposes of the Council (16 U.S.C. 470). It is estimated that donations of $5,000 will be received annually in FY 1986 and FY 1987.

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NATIONAL CAPITAL PLANNING COMMISSION

JUSTIFICATIONS FOR APPROPRIATION

FISCAL YEAR 1987

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MEMBERS OF NATIONAL CAPITAL PLANNING COMMISSION

Appointive Members

By the President

Glen T. Urquhart, Chairman
Virginia

William Eugene Baumgaertner
Maryland

Bruce Kirshenbaum
Virginia

By the Mayor of the District of Columbia

Ann V. Todd
District of Columbia

Robert J. Nash, Vice Chairman
District of Columbia

Ex-Officio Members

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Secretary of Defense

Honorable Donald Paul Hodel
Secretary of the Interior

Honorable Terence C. Golden
Administrator of General Services

Honorable William V. Roth, Jr.
Chairman
Committee on Governmental Affairs
United States Senate

Honorable Ronald V. Dellums
Chairman
Committee on the District of Columbia
United States House of Representatives

Honorable Marion S. Barry, Jr.
Mayor of the District of Columbia

Honorable David A. Clarke
Chairman
Council of the District of Columbia

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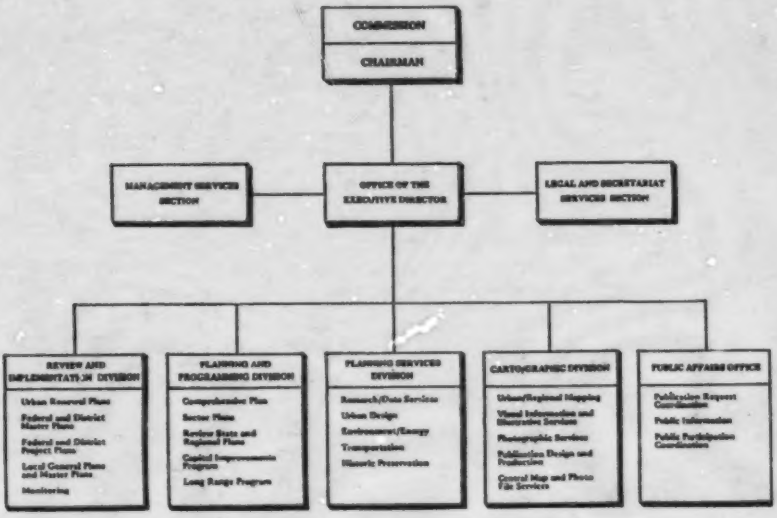
NATIONAL CAPITAL PLANNING COMMISSION



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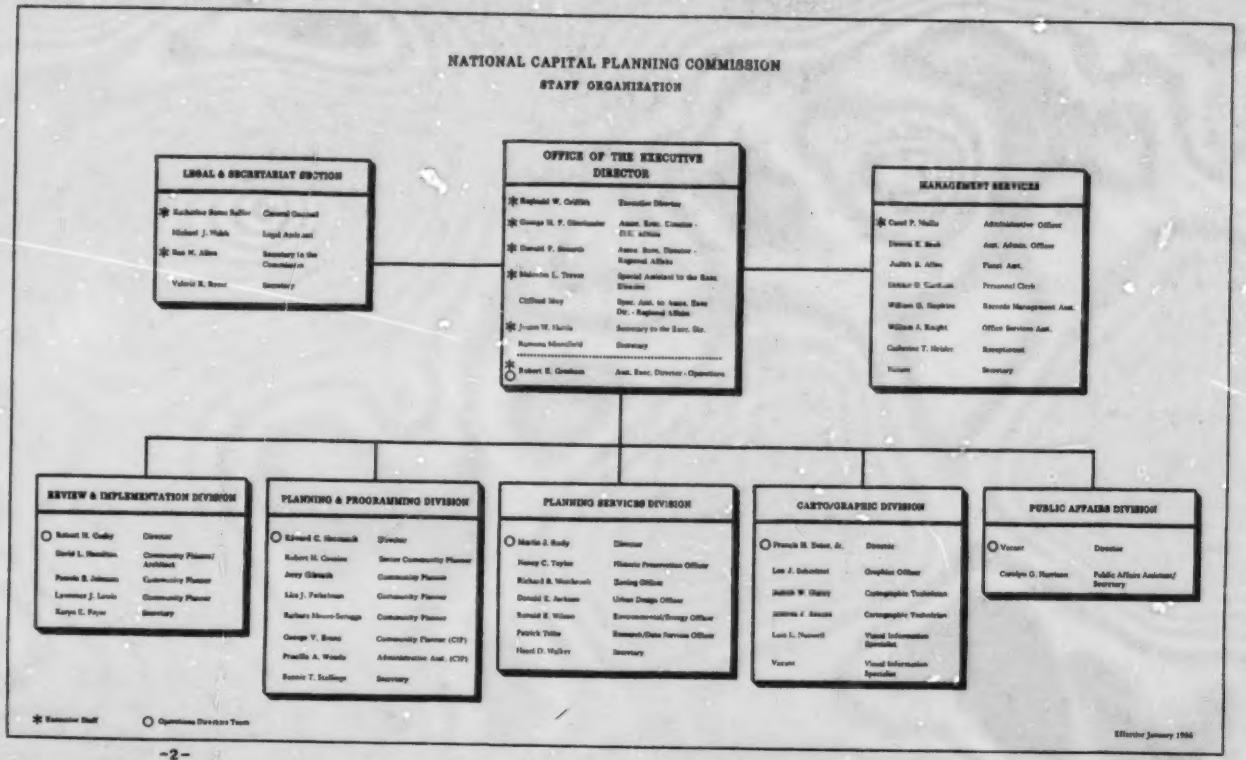

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NATIONAL CAPITAL PLANNING COMMISSION

Fiscal Year 1987 - Budget Request
Increase - Decrease Statement

The Commission's FY 1987 budget request reflects the same level of personnel staffing as we have had for FY 1985 and FY 1986. Given the variety of skills necessary to perform Commission objectives, and recognizing that in certain technical specialty areas, we are already staffed by only one person, we respectfully request no further cuts in staff levels be made at this time.

We are requesting $2,684,000 for FY 1987, which is approximately $12,000 less than our FY 1986 funding levels (see chart on page 4). There are no 1986 salary increases built into the base of FY-1987 figures. The Commission plans to fund the additional personnel costs generated by the Performance Management and Recognition System (PMRS) which recently replaced the Merit Pay System for mid-level employees and other additional costs in other services, by the savings in rent generated by voluntarily reducing some of our office space. Also, increased cost attributed to FTS, Postal services, Health services, and GSA's payroll services will be offset by lower equipment expenditures.

The duties and responsibilities of the National Capital Planning Commission, and our specific undertakings over a 3-year period (including what we propose to do in the budget year) are outlined in our narrative justification starting on page 7.

Inasmuch as Gramm-Rudman-Hollings reductions are a real consideration for the remainder of FY-1986 (and even beyond), we have included an Object Classification column to show the affect of those cuts on our Commission in FY-1986. A reduction of $116,000 in Budget Authority would have to be taken primarily in the 11.0 and 12.0 Object Classification areas. We would hope that this would not involve actual personnel cuts, but could be handled by "gapping" vacancies and by recruiting at lower grade levels.

Normal FY-1986	Amount Sequestered	Gramm-Rudman FY-1986	Normal FY-1987	Difference Between Normal FY-86 & 87
$2,696,000	$116,000	$2,580,000	$2,684,000	-$12,000

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FISCAL YEAR 1987 BUDGET
SALARIES & EXPENSES APPROPRIATION
ANALYSIS BY OBJECT CLASSIFICATION

Classification	Normal FY-1986	Amount Sequestered	Gramm-Rudman FY-1986	Normal FY-1987	Difference Between Normal 86 & 87
11.0 Personnel Compensation	$1,845,000	105	$1,740,000	$1,861,000	+16,000
12.0 Personnel Benefits	200,000	11	189,000	200,000	0
21.0 Travel & Transportation of Persons	10,000	0	10,000	10,000	0
23.1 Standard level User Charges (Rent)	397,000	0	397,000	370,000	-27,000
23.2 Other Rent Communications & Utilities	83,000	0	83,000	83,000	0
24.0 Printing & Reproduction	30,000	0	30,000	30,000	0
25.0 Contracts with Experts and Consultants	40,000	0	40,000	40,000	0
25.0 Other Services	62,000	0	62,000	70,000	+8,000
26.0 Supplies & Materials	25,000	0	25,000	25,000	0
31.0 Equipment	24,000	0	24,000	15,000	-9,000
Totals	$2,696,000	$116,000	$2,580,000*	$2,684,000	-$12,000

*The Gramm-Rudman total was arrived at by OMB following the sequestration process established by the Balanced Budget and Emergency Deficit Control Act of 1985 (P.L. 99-177).

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NATIONAL CAPITAL PLANNING COMMISSION

Responsibilities

Pursuant to the National Capital Planning Act of 1952, as amended, the National Capital Planning Commission is the central planning agency for the Federal Government in the National Capital Region. The Region is defined in the Act as the District of Columbia; Montgomery and Prince Georges Counties in Maryland; Arlington, Fairfax, Loudoun, and Prince William Counties in Virginia; and all cities in Maryland and Virginia within the outer limits of such counties. The Act has as its purpose the securing of comprehensive planning for the physical development of the National Capital. The Commission is charged with preparing and adopting Federal elements and reviewing, for Federal interest, District of Columbia elements of the Comprehensive Plan for the National Capital. The Commission also prepares annual Federal Capital Improvements Programs for the National Capital Region and reviews and makes recommendations on master plans and development plans of Federal and District agencies and annual Capital improvements programs of the District. To provide coordination between the development programs of the Federal Government and the local governments in the National Capital Region, the Commission also reviews the general plans and capital improvements programs of these local governments and notifications on Federal grant applications for projects in the region to determine possible impacts on Federal interest and makes related recommendations.

Its responsibilities are, therefore, distinct from those of the Commission of Fine Arts which advises the President, Congress, and department heads on matters of painting, sculpture, architectural aesthetics, and other fine arts, or from those of the Pennsylvania Avenue Development Corporation which is charged with implementing the Pennsylvania Avenue Development Plan.

Status of Pertinent Authorization

The authorization for the present account (3[illegible]-25-0103-0-1-451) is contained in the National Capital Planning Act of 1952, as amended (40 U.S.C. 71i; D.C. Code secs. 1-1001 to 1-1010). There are no estimates herein contained that exceed any limitations placed on the Commission by Committee Reports for the preceding fiscal year.

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NATIONAL CAPITAL PLANNING COMMISSION

SALARIES AND EXPENSES

For necessary expenses, as authorized by the National Capital Planning Act of 1952 (40 U.S.C. 71-711), including services as authorized by 5 U.S.C. 3109, [$2,712,000] $ 2,684,000

(Department of the Interior and Related Agencies Appropriation Act, 1986, as included in Public Law 99-190)

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PROGRAM BY ORGANIZATIONAL UNIT

1.

A. Office of the Executive Director

The staff activities of the Commission are directed by the Executive Director who is responsible for all executive and administrative functions not specifically reserved for the Chairman, as head of the agency, and for all professional work of the staff.

In brief, this office formulates policy proposals on technical matters to present the Commission, represents the Commission in carrying out its policies and programs, and supervises, coordinates, and reviews the work of the staff.

Within the Office of the Executive Director, are five (5) additional professional staff positions: Associate Executive Director for District of Columbia Affairs (AED-DCA), Associate Executive Director for Regional Affairs (AED-RA), a Special Assistant to the Executive Director, an Assistant Executive Director for Operations, and a Special Assistant for Regional Affairs. The responsibilities of the AED-DCA are to assist the Executive Director in managing the Commission's business in relation to its planning and review function for the District of Columbia. The AED-RA is responsible for assisting the Executive Director in the Commission's response to Federal planning and review functions as they relate to the National Capital Region outside of the District of Columbia. He is also responsible for the coordination of Federal planning matters with the Metropolitan Washington Council of Governments (COG). The AED for Operations supervises the five (5) divisions on a daily basis. The remaining two professional staff members work under the direction of either the two Associate Directors or the Executive Director.

B. Management Services Section

Since the Commission is an independent agency, all administrative and management functions required of a Federal agency are carried out by its own staff or contracted out, including financial management and accounting, budget preparation and control, personnel management, records management, space management, property records and accountability, and other general administrative functions. This office is responsible for storing and maintaining all official records of the Commission as well as activities related to the Privacy Act, paperwork management, reception and mailroom operations.

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C. Legal and Secretariat Services Section

The Section, through the General Counsel and the Secretary to the Commission, provides the following services to the Commission and its staff:

1. Advises on the statutory powers, duties, and functions of the Commission and on legal questions in the fields of planning, plan review, urban renewal, environment, transportation, open space, and landmarks preservation; provides legal advice on regulatory matters; and serves as designated agency ethics official and freedom of information officer;

2. Reviews, and prepares reports on, proposed and pending legislation; prepares Congressional testimony; provides statutory and regulatory drafting services; and provides Congressional and Executive Branch liaison on legislative matters;

3. Reviews and prepares litigation reports, pleadings and briefings for, or together with, the Department of Justice and other parties.

4. Prepares or supervises the preparation of notices, agendas, memoranda of actions, and other materials related to Commission meetings, certifications and notifications to Federal, state, and local governmental authorities of actions taken by the Commission and authorizations for attendance and compensation of Commission members; and

5. Advises the presiding officer at Commission meetings concerning the Commission's By-Laws, Standing Rules of Procedure and other procedural matters; prepares proposed amendments to the By-Laws and Standing Rules.

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D. Review and Implementation Division

Planning activities for the Review and Implementation Division include:

1. Master and project plan reviews
2. Urban renewal planning
3. Federal interest reviews of local plans
4. Coordination of Federal development planning

FY 1985

During Fiscal year 1985, the Commission reviewed 23 master plans and master plan modificatins for Federal installations, 94 site and building plans submissions for Federal projects, four modified general development plans for stream valley parks acquired with Capper-Cramton funds, six proposals to excess Federal land, two site and building plan submissions for District of Columbia projects, 14 street and alley closings, and six transfers of jurisdictions.

During the fiscal year, the Commission reviewed the capital improvements program of ten state and local agencies and governments in the region to determine whether Federal interests were potentially affected by any of the proposed projects. Where Federal interests appeared to be potentially affected, the Commission made recommendations to the affected agencies and governments for special coordination or other steps to avoid adverse impacts on the identified Federal interests. The Commission has also reviewed four plans for designated sector areas in two local jurisdictions in the region to evaluate their potential impacts on Federal interest in these communities.

FY 1986

Capital improvements programming review activities will include Federal interest reviews of capital improvements programs of other local governments, state governments and regional agencies with proposed developments potentially affecting Federal interests in the Region.

In FY 1986, the Commission will be required to continue to conduct reviews of Federal and District of Columbia master plans and projects and other proposals, such as street and alley closings and transfers of jurisdictions, at a level expected to be generally consistent with the reviews conducted during FY 1985. Among the plans which the Commission is expected to review during the year are master plans for Goddard Space Flight Center, U.S. Cost Guard Station-Alexandria, Fort Myer, Andrews Air Force Base, National Arboretum, Dalecarlia Reservoir, Fort Belvoir, and Fort McNair. Site and building plans submissions are expected during the fiscal year for such projects as the Visitors Center and Parking Facility for Arlington National Cemetery, the James T. Rowley Secret

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Service Training Center in Beltsville, Maryland, the Headquarters Laboratory for the Food and Drug Administration in Beltsville, Potomac Branch Post Office, Olmsted Walk exhibits at National Zoological Park, Phase IV of the Electromagnetic Laboratory at the Naval Research Laboratory, the General Post Office (Old Tariff Commission Building) for the Smithsonian Institution, Union Station, U.S. Holocoust Memorial, and Building 111 at the Navy Yard.

The Commission will continue to conduct Federal interest reviews of plans and proposals of local and state governments in the Region to determine possible impacts on Federal interests and make appropriate recommendations. Plans and proposals which will be given Federal interest reviews include sector and area plans in Prince George's and Montgomery Counties and other area plans of local governments for portions or all of the lands in their individual jurisdiction. During the fiscal year the Commission also will continue to coordinate consultation activities with local, regional, and state officials to achieve coordination on proposed Federal developments.

Urban Renewal planning activities will include the preparation and adoption of urban renewal plans and modifications for Fort Lincoln, Southwest Project Area, C-1 and other urban renewal areas in the District of Columbia.

FY 1987

Capital improvements programming review activities will include Federal interest reviews of capital improvements programs of other local governments, state governments and regional agencies with proposed developments potentially affecting Federal interests in the Region.

Master and project planning review activities in FY 1987 will include reviews of plans of Federal agencies and the District of Columbia Government for developments and proposals in the Region. Included will be master plans for large tracts and installations; site and building plans for individual projects; plans for the park, parkway and playground system of the National Capital; proposed land acquisition; locations and designs for monuments and memorials; excess Federal land surveys; sales of surplus land; and other proposals, such as transfers of jurisdiction and applications for Corps of Engineers permits for development in rivers and streams in the Region. Based on the current Federal Capital Improvements Program for the National Capital Region, it is anticipated that in FY 1987 Commission reviews will include such projects as the Physics Laboratory at the Naval Research Laboratory, a Savannah and Plains Animals Exhibit at the National Zoological Park, an Unaccompanied Officers Housing project for the Naval Medical Command, National Capital Region, and the North Wing Addition to Building 54 at the main campus of the Walter Reed Army Medical Center.

Federal interest reviews of local plans and programs will continue to focus on identifying plans and proposals that may affect Federal interests, coordinating such plans and proposals with affected Federal agencies, and providing comments and recommendations to the sponsoring state and local

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agencies and governments. Plans and proposals which will be given Federal interest reviews include area plans of local governments for portions or all of the lands in their individual jurisdiction, specific development proposals which may affect Federal lands or other interests, and applications for Federal grants submitted for Commission review pursuant to Executive Order 12372.

Urban Renewal planning activities will include the preperation and adoption of urban renewal plans and modifications for urban renewal areas in the District of Columbia.

The Commission will continue to serve as a clearinghouse for Federal planning and development activities in the Region. In cooperation with other Federal agencies, the Commission will continue to coordinate early consultation activities for major Federal developments in the Region to insure that state, regional, and local elected officials and planners are fully aware of plans and developments proposed by Federal agencies and have an opportunity to coordinate with those agencies on such proposals.

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E. Planning and Programming Division

The current functions and responsibilities of the Planning and Programming Division are to:

1. Prepare the Federal elements of the Comprehensive Plan for the National Capital and any amendments thereto;

2. Review proposed District elements of the Comprehensive Plan to insure that the Federal interests in the National Capital are not adversely affected;

3. Prepare, annually, a 5-year Federal Capital Improvements Program for the National Capital Region;

4. Advise and assist Federal agencies, in cooperation with the Review and Implementation Division, in the selection of new locations, the consolidation or relocation of existing facilities and the preparation of master plans for Federal installations;

5. Prepare and coordinate plans for various Federal planning sectors or areas in the Region which contain concentrations of Federal installations and in which there is a high degree of Federal interest;

6. Maintain liaison and coordination with local and regional planning agencies on comprehensive planning matters;

7. Review long-range general plans prepared by state and regional agencies in order to determine their consistency with the Comprehensive Plan and their impact on Federal interests in the Region; and

8. Review the fiscal year budget requests of Federal agencies for developments in the National Capital Region.

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FY 1985

In FY 1985, the following activities were accomplished:

1. The Visitors to the National Capital element of the Comprehensive Plan was completed and adopted by the Commission. It provides planning guidance for accommodating and serving visitors to Federal facilities, museums, monuments, memorials, and other Federal attractions in the Region.

2. Studies of visitor circulation and parking and other issues were completed as part of the general development plan for the central monumental area of the National Capital and nearby Federal facilities as an element of the Comprehensive Plan. (Monumental Core Sector Plan)

3. Materials necessary for the production and printing of the adopted elements of the Comprehensive Plan for the National Capital were assembled in conjunction with District of Columbia agencies.

4. A Real Property Manual to guide Foreign Missions in the processes and procedures necessary to acquire, locate, relocate, replace, expand and improve embassies, chanceries, and office space in the District of Columbia in accordance with the Foreign Missions Act, D.C. laws and regulations, and the Comprehensive Plan was completed.

5. The District Land Use element of the Comprehensive Plan and amendments to various other District elements submitted by the District of Columbia government were reviewed to insure that they will not have a negative impact on Federal activities or interest in the National Capital.

6. Federal agency review was coordinated, and consolidated Federal interest comments were prepared for several long-range plans for local jurisdictions in the Region. In addition, there was extensive participation in the Metropolitan Washington Council of Government's regional planning activities.

7. The Federal Capital Improvements Program for the National Capital Region for fiscal years 1986-1990 was completed and adopted. This is the ninth program adopted by the Commission. It contains 197 projects at an estimated cost of $1.36 billion. The Commission recommended 10 projects which should be considered by Federal agencies for future incorporation in the program to implement the Comprehensive Plan and planning objectives.

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8. The review of FY 1987 capital budget requests of Federal agencies for developments in the National Capital Region was completed. This included the requests of 15 Federal agencies involving a total of 85 individual projects for land acquisition and/or construction in the National Capital Region.

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FY 1986

In FY 1986, the activities of the Division will focus on:

1. Preparation of a general development plan for the central monumental area of the National Capital, and other nearby Federal areas involving major concentrations of Federal facilities as an element of the Comprehensive Plan. (Monumental Core Sector Plan)

2. Initiation of the preparation of a general development plan for the Beltsville Federal Planning Area, which contains a high concentration of contiguous Federal facilities, including the Beltsville Agricultural Research Center, Patuxent Wildlife Research Center, Goddard Space Flight Center, U.S. Secret Service Training Facility, Food and Drug Laboratories, the Baltimore-Washington Parkway, Naval Surface Weapons Center, and the Harry Diamond Laboratories Research Center.

3. Modifying as necessary and updating the Federal elements of the Comprehensive Plan to reflect new proposals or changed conditions.

4. Review of the District elements of the Comprehensive Plan submitted by the District of Columbia government, to insure that they will not have a negative impact on Federal activities or interests in the National Capital.

5. Review of comprehensive planning proposals of local jurisdictions, regional agencies and organizations in the Washington metropolitan area for impacts on the Federal interest.

6. Preparation of the Federal Capital Improvements Program for the National Capital Region for fiscal years 1987-1991.

7. Review of FY 1988 capital budget requests of Federal agencies for developments in the National Capital Region.

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FY 1987

In FY 1987, the activities of the Division will focus on:

1. Preparation and circulation for public and agency comment of a general development plan for the Beltsville Federal Planning Area, which contains a high concentration of contiguous Federal facilities, including the Beltsville Agricultural Research Center, Patuxent Wildlife Research Center, Goddard Space Flight Center, U.S. Secret Service Training Facility, Food and Drug Laboratories, the Baltimore-Washington Parkway, Naval Surface Weapons Center, and the Harry Diamond Laboratories Research Center.

2. Completion and Commission adoption of the general development plan for the central monumental area of the National Capital (Monumental Core Sector Plan).

3. Review of District elements of the Comprehensive Plan or amendments thereto, submitted by the District of Columbia government, to insure that they will not have a negative impact on Federal activities or interests in the National Capital.

4. Continuing review of comprehensive planning proposals by regional agencies and organizations in the Washington metropolitan area for impacts on the Federal interests.

5. Modifying, as necessary, and updating the Federal elements of the Comprehensive Plan to reflect changed conditions or new proposals.

6. Preparation of the Federal Capital Improvements Program for the National Capital Region for fiscal years 1988-1992.

7. Review of FY 1989 Capital Budget requests of Federal agencies for developments in the National Capital Region.

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F. Planning Services Division

The activities of the Planning Services Division include:

1. Research studies and data services
2. Historic preservation planning and research
3. Environmental impact-preparation and review
4. Transportation planning
5. Urban design
6. Special Studies
7. Zoning Reviews
8. Participation in the preparation of Comprehensive Plan for the National Capital
9. Assisting in the review of plans and projects submitted for Commission action

FY 1985

The Research/Data Officer undertook the following activities in FY 85:

Prepared data analyses on annual Federal employment changes, by State and Jurisdiction within the National Capital Region and by the Region as a whole.

Prepared materials for the annual update of the COG Cooperative Forecasting Program.

Participated in the State Data Center Affiliate Program for the 1980 Census.

Provided miscellaneous data services to other divisions and offices of the Commission.

The Historic Preservation Officer prepared the Preservation and Historic Features element of the Comprehensive Plan for the National Capital for a combined, single District/Federal publication. The Historic Preservation Officer also continued to review all Federal and District of Columbia submissions to the Commission which affect historic properties. Major efforts in this area involved the proposed Techworld development; a new

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National Defense University Library on the old Tempo ASB sites at Fort McNair, including a revised master plan for entire post; the proposed Holocaust Memorial Museum; and the restoration and adaptive use renovation of Union Station. As a follow-up to adoption of the Preservation element of the Comprehensive Plan, the Historic Preservation Officer also initiated the preparation of capsule descriptions of all designated Historic Landmarks and Historic Districts in the National Capital.

The Urban Design Officer's activities included the following:

Initiated detailed surveys and evaluations of Special Views and Vistas, including methodologies for application of such information in project reviews and preparation of the Comprehensive Plan. Assisted in the preparation of maps and lists designating Special Streets and Places pursuant to the Comprehensive Plan.

Assisted in special studies such as development guidelines for Smoot Bay and design concepts for the Poplar Point portion of Anacostia Park.

Provided advice and assistance to other offices and divisions of the Commission on the design of proposed Federal projects and plans, with major efforts on Union Station, Fort McNair, the Southeast Federal Center, and Federal interest reviews of the Techworld development.

The Environmental/Energy Officer provided technical assistance and environmental reviews of proposed Commission, Federal and non-Federal developments, plans or programs in the National Capital Region. The Commission initiated several of these actions, including urban renewal plan modifications and modifications to general development plans for Capper Cramton lands. Each of these actions required environmental evaluations and the making of determinations by the Executive Director. In addition, technical assistance was provided to Federal and local agencies on preparing environmental documents required by the Commission's environmental procedures. The major activities of the Environmental/Energy Officer in FY 1985 involved preparing staff comments on various environmental and transportation projects submitted for Commission action, including projects related to the extension of Metro's Greenbelt (E) Route.

The Zoning Review Officer: (1) provided assistance in the review of Federal interest projects, with special emphasis on zoning matters, in the District and other regional jurisdictions, to the Associate Directors and other Commission staff; and, (2) prepared draft recommendations and reports on zoning cases relative to their impact on Federal properties and interests in all jurisdictions of the National Capital Region. The more controversial zoning cases in FY 85 included the Planned Unit Development requests for Techworld and the Brookings Institute expansion.

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FY 1985

The Research/Data Officer plans to undertake the following activities:

Prepare data analyses on annual Federal employment changes.

Assist in Round 4 of the COG Cooperative Forecasting Program entailuse of the Commission's Federal Employment Impact Model, which will require updating.

Update the Commission's 1981 projections of Federal Employment in the National Capital Region.

Participate in the State Data Center Affiliate Program for the 1980 Census.

Provide miscellaneous data services to other divisions and offices of the Commission.

The Historic Preservation Officer will continue to advise and assist in the review of all Federal and District of Columbia submissions to the Commission which affect Historic Landmarks and Historic Districts and properties listed in the National Register of Historic Places. Consultations with a broad range of preservation professionals will continue to ensure that the Commission receives adequate guidance in diverse preservation fields. Work on capsule descriptions of all designated Historic Landmarks and Historic Districts in the National Capital will also be continued. In addition, it is anticipated that the Historic Preservation Officer will undertake several duties relating to exhibits and liaison ... the Smithsonian Institution.

The Urban Design Officer's activities will involve:

Continued detailed surveys and evaluation of urban design features and major characteristics generally recognized in the Comprehensive Plan, especially as potentials for Special Views and Vistas.

Completion of the Special Street Plans for Constitution Avenue Independence Avenues.

Preparation of the Illustrative Urban Design Plan for the Monumental Core Sector Plan.

Providing advice and assistance to other offices and divisions of the Commission in reviewing urban design aspects of Federal and District projects and plans.

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The Environmental/Energy Officer anticipates that environmental reviews of Federal and non-Federal proposals will continue at approximately the same level as Fiscal Year 1985. Commission preparation of environmental documents, through its role as a cooperating agency, is not expected to change significantly from current fiscal year levels. The environmental review responsibilities assigned to this office for transportation projects will likely lead to an increase in the work load of the Environmental Officer. This Office will continue to give technical assistance and advice on the preparation of environmental documentation for Comprehensive Plan elements and will provide technical support to other offices and divisions as needed.

In addition, the Commission's Environmental Policies and Procedures which are reviewed periodically will be reviewed during FY 86 to determine whether revisions are necessary.

The Zoning Officer will: (1) Continue to provide support and technical assistance to the Commission on zoning matters pertaining to Federal interest concerns and responsibilities. This will be accomplished via review in detail, of all zoning zoning proposals affecting Federal properties and interests in the National Capital Region with special emphasis on District of Columbia zoning applications pursuant to statutory requirements to review and comment on all proposed changes as to their relationship to the Comprehensive Plan for the National Capital. Additionally, the Zoning Officer will work with all local jurisdictions to improve the existing early warning system for zoning proposals that could affect Federal interests and activities in the Region.

FY 1987

The Research/Data Officer will continue his involvement in the following activities during FY 87:

Prepare data analyses on the next round of annual Federal employment changes.

Continue participation in the Round 4 of the COG Cooperative Forecasting Program.

Provide miscellaneous data services to other divisions and offices of the Commission.

The Historic Preservation Officer will continue to advise and assist on all Federal and District of Columbia submissions to the Commission which affect Historic Landmarks and Historic Districts and properties listed in

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the National Register of Historic Places. Work on capsule descriptions of historic properties will continue, and initial preparation for publication should occur. In addition, it is anticipated that the Historic Preservation Officer will continue to provide liaison with the Smithsonian Institution and undertake a number of special writing assignments.

The Urban Design Officer's activities will include providing advice and assistance to other offices and divisions of the Commission in reviewing urban design aspects of projects and plans. Completion of the Illustrative Urban Design Plan for the Monumental Core Sector Plan is also anticipated.

The Environmental/Energy Officer expects environmental reviews of Federal and non-Federal projects and proposals to continue at approximately the same level as reviews in previous years. Commission participation in the preparation of environmental documents, either as a cooperating agency or as a member of a technical oversight group is anticipated to increase slightly. Based on the number of transportation-related projects which are currently in the preliminary stages of development, this sector of the workload will be greater than in FY 86.

The Zoning Officer will continue to provide support and technical assistance to the Commission on zoning matters pertaining to Federal interest concerns and responsibilities. As in previous years this involves reviewing, in detail, for Commission action all zoning proposals affecting Federal properties and interests in the National Capital Region with special emphasis on District of Columbia zoning applications pursuant to statutory requirements to review and comment on all proposed changes as to their relationship to the Comprehensive Plan for the National Capital. During this period, the Zoning Officer will also assist in the selection of various Federal installations needing updated air photographs. Such photos, when available, will facilitate staff reviews and evaluations of local master plans and various projects of Commission concern with respect to proposed zoning change impacts.

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G. The activities of the Cartographic Division

1. Special Purpose Map and Diagram Production

2. Illustrative Services for Publication, Presentation and Exhibit work

3. Publication Design, Formatting and Page Layout

4. Printing, Duplication & Graphic Reproduction

5. Aerial & Ground Photography

6. Base Map Development and Revision & Contract Management

7. Operation and Maintenance of the Central Map and Photo File Systems

8. Exhibit/Display and Model Design and Production

FY 1985

1. The following publications were produced:

a. The four Quarterly Reviews and the Combined Yearly Review

b. the Poliminary and Adopted Documents and Summary Brochure of the 1986-1990 Federal Capital Improvements Program

c. The adopted "Visitors to the National Capital Element" of the Comprehensive Plan for the National Capital.

d. Two publications reflecting changes in Federal Employment.

2. Initiation of Comprehensive Plan Printing

Work was begun toward printing the complete Comprehensive Plan under one contract. An agreement was reached with the D.C. Government concerning production procedure and style. A work order was issued to Government Printing Office for design, artwork and printing.

3. Base Mapping

Revisions were made to the map series depicting Federal property in the National Capital Region, the L'Enfant City and the District of Columbia.

4. National Capital Planning Commission Exhibit

All three sections of the exhibit - "History & Image of the National Capital and the Federal Planning Role" were completed.

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5. Central Map File System

a. All the dormant material (6,139 maps) processed during FY-84 was transferred to the National Record Center.

b. A total of 4200 maps reflecting Commission action were processed, microfilmed and entered into the system.

6. Additional Cartographic Products

Initial coordination was undertaken with U.S. Geological Survey toward future production of an Ortho-photo map series depicting Federal properties in the National Capital Region and production of a tourist oriented map showing the National Park & Open Space system in the National Capital Region.

FY - 1986

1. It is planned that the following publications will be completed by the close of the Fiscal Year:

a. The four Quarterly Reviews and the Combined Yearly Review

b. The preliminary and adopted documents of the 1987-1991 Federal Capital Improvements Program

c. The complete Federal elements of the Comprehensive Plan for the National Capital, as part of a joint printing of the entire Comprehensive Plan for the National Capital with the District of Columbia.

d. A manual (booklet) describing Foreign Missions property acquisition procedures will be published.

2. Base Mapping

a. It is planned that the 1" = 200' city-wide photogrammetric map series will be extended to include complete coverage of the Monumental Core in areas outside the District of Columbia. This extension is critical to the Monumental Core Study which is being undertaken by the Planning and Programming Division during this Fiscal Year.

b. Further in-house revisions to the Federal property map series will be done.

c. In-house revisions to the 1" = 200' city-wide photogrammetric map series will be applied to critical areas.

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3. Central Map File System

a. An estimated 4,000 maps reflecting Commission action will be processed into the system by the close of the Fiscal Year.

b. The file system will be consolidated to conserve space.

4. National Capital Planning Commission Exhibit

Changes/revisions to the completed three part exhibit will be applied.

5. Additional Carto/Graphic Products

Detailed planning for the development of a tourist/visitor oriented National Capital Region Park/Open Space Map and an Ortho-photomap series depicting Federal property will begin in cooperation with U.S. Geological Survey.

FY 1987 Projections

1. Printing/Publications

a. The four Quarterly Reviews and Combined Yearly Review will be printed.

b. The preliminary and adopted documents reflecting the 1988-1992 Federal Capital Improvements Program will be printed.

c. The Monumental Core Sector Plan will be printed.

d. A second phase Special Street Study Report will be prepared.

2. Base Mapping

a. Additional in-house revisions to the 1" = 200' photogrammetric map series will be done.

b. Work will begin toward production of a new Federal property base map series.

3. Central Map File System

a. An estimated 4,000 Commission Action maps will be processed into the system.

b. Work will begin toward processing dormant material for transfer to National Record Center.

4. Additional Carto/Graphic Products

Production of the National Capital Park/Open Space System map and the Federal property Ortho-photo map series will begin.

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H. Public Affairs Division

The Public Affairs Division provides the following services:

1. coordinates contacts between the Commission and Commission staff and the news media, including providing information on agendas and actions of the Commission;

2. provides editorial service for the Commission's publications including the Quarterly Review of Commission Proceedings;

3. coordinates the Commission's public participation program, providing information on Commission policies, programs, and activities to individuals, organizations, students, and national and foreign visitors;

4. provides information and arranges briefing sessions on Commission meeting agenda items for members of the public and interested representatives of Federal and local government agencies;

5. coordinates and maintains the Commission's computerized mail lists, including periodic updating and revision; and

6. provides liaison to Congressional Offices on non-budgetary and non-legislative matters.

FY 1985

In FY 1985 the following major activities were accomplished:

1. in coordination with the Associate Executive Director for Regional Affairs, continued improvements were made in the Commission's program for public participation and intergovernmental liaison.

2. the monthly mailings of tentative Commission agendas were conducted in a timely fashion, providing consistent notice to the public of upcoming Commission activities.

3. the Quarterly Reviews of Commission Proceedings were published and disseminated in a timely fashion.

4. the Federal Partnership in Education program was coordinated by the Division.

5. 375 public requests for Commission materials and publications were filled.

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FY 1986

During FY 1986 the activities of the Division will focus on:

1. continuing to coordinate with the Associate Executive Director for Regional Affairs in maintaining and improving the Commission's program for public participation and intergovernmental liaison;

2. maintaining and improving the process for notifying affected members of the public regarding pending items before the Commission;

3. insuring timely publication of the Quarterly Review of Commission Proceedings;

4. continuing to distribute Commission materials to members of the public as those materials are requested;

5. organizing occasional seminars and other public events, with the purpose of educating Federal and local officials and the general public in Federal planning and development concepts in the National Capital Region;

6. improving coordination with the news media to achieve a more balanced coverage of Commission activities; and

7. developing a plan to make the Commission mail lists more readily accessible to all staff users.

FY 1987

In FY 1987 the activities of the Division will be directed to the following:

1. continuing to coordinate with the Associate Executive Director for Regional Affairs in maintaining and improving the Commission's program for public participation and intergovernmental affairs;

2. continuing to insure timely publication of the Quarterly Review;

3. evaluating and revising, as necessary, the processes for compiling, storing and updating Commission mail lists and implementing a plan to make the mail lists more readily and effecientiy accessible to all staff users;

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4. organizing occasional seminars and other public events as required by the Commission, with the purpose of educating Federal and local officials and the general public in Federal planning and development concerns in the National Capital Region;

5. continuing to distribute Commission materials to members of the public, as those materials are requested; and

6. continuing to monitor and strengthen contacts with the news media to achieve a more balanced coverage of Commission activities.

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II. Services of Experts and Consultants

A. Fiscal Year 1985

Normal consultant services to support Commission staff on special projects, including environmental matters, and programs needing outside expertise.....$44,000

B. Fiscal Year 1986

Normal consultant services to support Commission staff on special projects, including environmental matters, and programs needing outside expertise.....$40,000

C. Fiscal Year 1987

Normal consultant services to support Commission staff on special projects, including environmental matters, and programs needing outside expertise.....$40,000

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STANDARD FORM 300

NATIONAL CAPITAL PLANNING COMMISSION
SALARIES & EXPENSES

Identification code 95-2500-0-1-451	1985 actual	1986 estimate	1987 estimate
Program by activities:			
Direct program:			
1. Planning development of the National Capital...	2,692	2,696	2,684
Total Direct program...	2,692	2,696	2,684
Reimbursable program.....	25	...	...
10.00 Total obligations.....	2,717	2,696	2,684
Financing:			
11.00 Offsetting collections from Federal funds.....	25	...	...
39.00 Budget authority.....	2,692	2,696	2,684
Budget authority:			
40.00 Appropriation.....	2,692	2,712	2,684
40.02 Reduction for PL 99-190....	...	-16	...
43.00 Appropriations Adjustment	2,692	2,696	2,684
44.20 Supplemental for civilian pay raises.....	22	...	...
Relation of obligations to outlays:			
71.00 Obligations incurred, net.	2,692	2,696	2,684
72.40 Obligated balance, start of year.....	269	397	397
74.40 Obligated balance, end of year	397	-397	-397
77.00 Adjustments in expired accounts.....	-8	...	...
90.00 Outlays, excluding pay raise supplemental....	2,556	2,696	2,684
91.20 Outlays from civilian pay raise supplemental....	22	...	...

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STANDARD FORM 304
May 1968, Bureau of the Budget
Circular No. A-11, Revised
104-105

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code	1985 actual	1986 estimate	1987 estimate
Personnel compensation:			
11.1 Permanent positions	1,517	1,639	1,646
11.3 Positions other than permanent	171	171	180
11.5 Other personnel compensation	26	35	35
[illegible]			
Total personnel compensation	1,714	1,845	1,861
Personnel benefits:			
12.1 Civilian	180	200	200
[illegible]			
21.0 Travel and transportation of persons	10	10	10
[illegible]			
Other			
23.0 Rent, communications, and utilities	61	63	63
23.1 Standard level user charges	397	397	370
24.0 Printing and reproduction	118	30	30
25.0 Other services	120	102	110
26.0 Supplies and materials	27	25	25
31.0 Equipment	65	24	15
[illegible]			
[illegible]			
[illegible]			
[illegible]			
[illegible]			
[illegible]			
99.0 Subtotal direct obligations	2,692	2,696	2,684
99.0 Reimbursable program	25	...	...
99.0 Total obligations	2,717	2,696	2,684

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STANDARD FORM 300

GRAMM-RUDMAN*

NATIONAL CAPITAL PLANNING COMMISSION
SALARIES & EXPENSES

Identification code 95-2500-0-1-451	'85 actual	'86* estimate	'87 estimate
Program by activities:			
Direct program:			
1. Planning development of the National Capital...	2,692	2,580	2,684
Total Direct program...	2,692	2,580	2,684
Reimbursable program.....	25	...	...
10.00 Total obligations.....	2,717	2,580	2,684
Financing:			
11.00 Offsetting collections from Federal funds.....	25	...	...
39.00 Budget authority	2,692	2,580	2,684
Budget authority:			
40.00 Appropriation.....	2,692	2,596	2,684
40.02 Reduction for PL 99-190....	...	-16	...
43.00 Appropriations Adjustment..	2,692	2,580	2,684
44.20 Supplemental for civilian pay raises.....	22	...	...
Relation of obligations to outlays:			
71.00 Obligations incurred, net	2,692	2,580	2,684
72.40 Obligated balance, start of year.....	269	397	391
74.40 Obligated balance, end of year	-397	-391	-391
77.00 Adjustments in expired accounts.....	-8	...	...
99.00 Outlays, excluding pay raise supplemental....	2,556	2,586	2,684
91.20 Outlays from civilian pay raise supplemental....	22	...	...

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STANDARD FORM 304
Mar 1980, Bureau of the Budget
Circular No. A-11, Revised
304-102

GRAMM-RUDMAN
*The FY 86 total was arrived at by OMB following the sequestration process established by the Balanced Budget and Emergency Deficit Control Act of 1985 (P.L. 99-177).

OBJECT CLASSIFICATION (in thousands of dollars)

Identification code	1985 actual	1986* estimate	1987 estimate
Personnel compensation:			
11.1 Permanent positions	1,517	1,550	1,646
11.3 Positions other than permanent	171	160	180
11.5 Other personnel compensation	26	30	35
[illegible]			
Total personnel compensation	1,714	1,740	1,861
Personnel benefits:			
12.1 Civilian	180	189	200
[illegible]			
21.0 Travel and transportation of persons	10	10	10
[illegible]			
Other			
23.0 Rent, communications, and utilities	61	63	63
23.1 Standard level user charges	397	397	370
24.0 Printing and reproduction	118	30	30
25.0 Other services	120	102	110
26.0 Supplies and materials	27	25	25
31.0 Equipment	65	24	15
[illegible]			
[illegible]			
[illegible]			
[illegible]			
[illegible]			
[illegible]			
99.0 Subtotal direct obligations	2,692	2,580	2,684
99.0 Reimbursable program	25	...	...
99.0 Total obligations	2,717	2,580	2,684

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STANDARD FORM 300

NATIONAL CAPITAL PLANNING COMMISSION

SALARIES AND EXPENSES

DETAIL OF PERMANENT POSITIONS

Identification code 95-2500-0-1-451	1985 actual	1986 estimate	1987 estimate
ES-6	1	1	1
ES-5	2	2	2
ES-4	1	1	1
Subtotal	4	4	4
GS/GM-15	2	2	2
GS/GM-14	6	7	7
GS/GM-13	6	7	7
GS-12	5	6	6
GS-11	1	3	3
GS-9	8	5	5
GS-8	1	2	2
GS-7	3	2	2
GS-6	3	4	4
GS-5	3	2	3
GS-4	1	2	1
GS-3			
Subtotal	43	46	46
Total permanent positions	46	46	46
Unfilled positions, end of year	-3	..	..
Total permanent employment, end of year	43	46	46

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STANDARD FORM 300

Identification code 95-2500-0-1-451	1985 actual	1986 estimate	1987 estimate
Total number of full-time permanent positions	46	46	46
Total compensable work years: Full-time equivalent employment	50	50	50
Average ES salary	70,500	70,500	70,500
Average GS grade	11.0	10.50	10.52
Average GS salary	33,891	33,476	33,540

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FRANKLIN DELANO ROOSEVELT MEMORIAL COMMISSION

SALARIES AND EXPENSES

[For necessary expenses of the Franklin Delano Roosevelt Memorial Commission, established by the Act of August 11, 1955 (69 Stat. 694), as amended by Public Law 92-332 (86 Stat. 401), $21,000 to remain available for obligation until September 30, 1987.] Department of the Interior and Related Agencies Appropriations Act, 1986, as included in Public Law 99-190.)

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DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
OTHER HISTORICAL AND MEMORIAL AGENCIES
FRANKLIN DELANO ROOSEVELT MEMORIAL COMMISSION

Program and Financing (in thousands of dollars)

Identification code 76-0700-0-1-806		1985 actual	1986 estimate	1987 estimate
Program by activities:				
10.00	Total obligations	21	24	21
Financing:				
21.40	Unobligated balance available, start of year	-25	-24	-21
24.40	Unobligated balance available, end of year	24	21	—
40.00	Budget authority (appropriation)	21	21	—
Relation of obligations to outlays:				
71.00	Obligations incurred, net	21	24	21
72.40	Obligated balance, start of year	-1	—	—
90.00	Outlays	20	24	21

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Object Classification (thousands of dollars)

Identification code 76-0700-0-1-806		1985 actual	1986 estimate	1987 estimate
21.0	Travel and transportation of persons	—	2	—
23.3	Communications, utilities, and miscellaneous charges	1	1	—
25.0	Other services	20	20	21
26.0	Supplies and materials	—	1	—
99.9	Total obligations	21	24	21

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DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

FRANKLIN DELANO ROOSEVELT MEMORIAL COMMISSION

The Commission continues its coordination work on behalf of the finalization of plans for a memorial to Franklin Delano Roosevelt.

An appropriation is not being requested in fiscal 1987. Carryover funds from fiscal 1986, in the amount of $21,000, are sufficient for the Commission's expenses in fiscal 1987.

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PENNSYLVANIA AVENUE DEVELOPMENT CORPORATION

Fiscal Year 1987
Appropriations Request

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The Pennsylvania Avenue Development Corporation requests additional budget authority of $6,211,000 for FY 1987, of which public development activities require $3,774,000 and salary and administrative costs require $2,437,000.

The table on the next page compares the FY 1987 budget with the FY 1986 appropriation, as adjusted to reflect the reduction resulting from Public Law 99-177.

The land acquisition and development fund continues to earn sufficient revenues from the sale or lease of real estate to preclude a need for a request for additional borrowing authority for FY 1987.

The Public Development budget request of $3,774,000 provides for the fabrication and installation of pedestrian lights on the north and south sidewalks of Pennsylvania Avenue and for essential contracts with construction management and engineering firms. These pedestrian lights are the last component of the three-element lighting system envisioned for Pennsylvania Avenue, to be installed with the previously-funded and largely in place high-mast roadway lights and the decorative curb lights. The Public Development fund request will also contribute to the financial viability of the Lansburgh's property, which PADC is offering for development through a public competition.

The Salaries and Expense budget of $2,437,000 will provide for a staff of 37 employees on a full-time-equivalent basis and the administrative costs of the program and office.

The detail of the Public Development and Salaries and Expenses budget requests are discussed in the two sections which follow, followed in turn by a brief summary of the status of the square development projects in which the Corporation is involved. Although, as mentioned, additional borrowing authority is not needed for FY 1987, PADC will be actively engaged in managing numerous development projects, purchasing real estate where necessary to make new development projects feasible, committing available funds to preserve existing historic structures and/or facades, and funding the relocation of business tenants from PADC-owned sites. It is evident that PADC will have a full workload of activities in each year ahead in order to carry out its mandated revitalization work by the projected completion year of 1992.

Congressional approval of the requested budget authority of $6,211,000 will enable PADC's progress to continue in improving public spaces and redeveloping the squares of the project area.

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FY 1987 Request and FY 1986 Appropriation

	Budget Authority FY 1986	Requested Budget Authority FY 1987
Salaries and Expenses		
Appropriation	$2,315,000	$2,437,000
P.L. 99-177 Reduction	-100,000	N/A
Net Budget	2,215,000	2,437,000
Public Development		
Appropriation	3,230,000	3,774,000
P.L. 99-177 Reduction	-139,000	N/A
Net Budget	3,091,000	3,774,000
Land Acquisition and Development	-0-*	-0-
Total Budget Authority (Net)	$5,406,000	$6,211,000

* Although there is no borrowing authority to sequester, $1,075,000 in expected Land Acquisition and Development receipts for FY 1986 are sequestered by P.L. 99-177.

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The Pennsylvania Avenue Development Corporation requests $2,437,000 in new budget authority for the FY 1987 salary and administrative costs of the staff and governing board of directors.

Approximately two-thirds of the budget is needed for direct and indirect payroll expenses and the remaining one-third is necessary for office space rent, the rental and purchase of equipment, printing, office supplies and a variety of services and other items necessary for the administration of the program and office.

A comparison of PADC's budget for FY 1985 and FY 1986 (as reduced by Public Law 99-177's sequestration) to the Corporation's FY 1987 budget request is as follows:

FY 1985		FY 1986 Budget		FY 1987
Appropriation:	$2,272,000	Appropriation:	$2,315,000	$2,437,000
Less Funds Returned :	-44,000	Reduction by P.L. 99-177:	-100,000	--
	$2,228,000		$2,215,000	$2,437,000

The table on page 4 displays by object classification category the proposed use of the requested FY 1987 budget, which is discussed in detail in the balance of this section. The amounts shown and discussed for the FY 1986 budget reflects a distribution of the $100,000 reduction to the various object class spending categories.

11.1 Full-time permanent positions

Budget for FY 1986	Request for FY 1987	Change FY 1986-FY 1987
$1,200,000	$1,320,000	+ $120,000

The Corporation will require $1,320,000 to fund the direct salary costs of thirty-four permanent position employees in FY 1987.

Th reason for the increase in this budget category for FY 1987 over that of FY 1986 is that the FY 86 permanent position payroll budget has been reduced more than any other spending category to achieve the $100,000 reduction resulting from the application of Public Law 99-177 to PADC's Salaries and Expenses appropriation.

11.3 Positions other than full-time permanent

Budget for FY 1986	Request for FY 1987	Change FY 1986-FY 1987
$ 90,000	$120,000	+ $30,000

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PENNSYLVANIA AVENUE DEVELOPMENT CORPORATION
Salaries and Expenses
Object Classification (in thousands of dollars)

Identification code 42-0100-0-1-451	1985 actual	1986 estimate	1987 estimate
11.1 Full time permanent positions..	1,157	1,200	1,320
11.3 Positions other than full time permanent.....	96	90	120
11.5 Other personnel compensation...	22	30	30
11.9 Total personnel compensation...	1,273	1,320	1,470
12.1 Personnel benefits: Civilian..	134	140	160
21.0 Travel and transportation of persons.....	14	15	25
22.0 Transportation of things.....	--	--	2
23.1 Standard level user charges....	213	260	260
23.2 Communications, utilities, and other rent.....	45	50	60
24.0 Printing and reproduction.....	64	65	65
25.0 Other services.....	378	300	300
26.0 Supplies and materials.....	40	40	45
31.0 Equipment.....	65	25	50
99.9 Total obligations.....	2,228	2,215	2,437

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The Corporation requests $120,000 in FY 1987 for the employment of temporary, part-time, and summer tenure personnel and, on an as-needed basis, experts hired for limited assignments. Additionally, the per diem salaries of private sector members of the Board of Directors would be paid from this budget.

11.5 Other personnel compensation

Budget for FY 1986	Requested for FY 1987	Change FY 1986-FY 1987
$30,000	$30,000	0

A budget of $30,000 is requested for other personnel exenditures, the same as was approved for FY 1986. Other personnel compensation includes overtime pay for employees below the GS-11 level, incentive payments required under the Performance Management and Recognition System for GM13-GM-15 employees, and cash awards for employees who are deserving of special recognition for their work performances.

12.1 Civilian personnel benefits

Budget for FY 1986	Requested for FY 1987	Change FY 1986-FY 1987
$140,000	$160,000	+ $20,000

Indirect payroll costs for the Corporation's full-time permanent and other employees is expected to total $160,000 for FY 1987. These personnel benefit costs include mandatory Federal contributions to the civil service retirement fund and the FICA-Medicare funds, as well as to employee health plans.

21.0 Travel and transportation of persons

Budget for FY 1986	Requested for FY 1987	Change FY 1986-FY 1987
$15,000	$25,000	+ $10,000

A budget of $25,000 is requested for FY 1987 for employee travel to out-of-town meetings with contractors and developers with whom PADC is conducting business, and for training needed to enhance skills and knowledge of professional and secretarial staff members. Local transportation costs for employees within the metropolitan area would also be funded by this requested budget.

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22.0 Transportation of things

Budget for FY 1986	Requested for FY 1987	Change FY 1986-FY 1987
0	$2,000	+ $2,000

A nominal budget of $2,000 for the transportation of things is requested for FY 1986 to cover any needed shipment of equipment, furnishings or development materials to and from the Corporation's office during the year.

23.1 Standard lever user charges (Office Rent)

Budget for FY 1986	Requested for FY 1987	Change FY 1986-FY 1987
$260,000	$260,000	0

Having completed the relocation of its office from 425 13th Street, N.W., to 1331 Pensylvania Avenue, N.W. in April, 1985, the Corporation is now an occupant of 8600 square feet of space which the GSA has leased for a five year period. The rent which GSA pays for this space, which is passed through to PADC for payment, is $260,000 per year.

23.2 Communications, utilities and other rent

Budget for FY 1986	Requested for FY 1987	Change FY 1986-FY 1987
$50,000	$60,000	+ $10,000

A budget of $60,000 is needed to fund the rental charges of the Corporation's telephone system, postage, and the rental of office equipment. Approximately $30,000 will be required to fund telephone rental charges, while postage is estimated to require $20,000 in FY 1987.

24.0 Printing and reproduction

Budget for FY 1986	Requested for FY 1987	Change FY 1986-FY 1987
$65,000	$65,000	0

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The Corporation requests $65,000 for printing needs for FY 1987, the same amount that was approved for the current budget year. Projected printing expenditures include those for the publication of the annual report, reprinting of the Pennsylvania Avenue Plan - 1974, publication of announcements in The Federal Register and the Code of Federal Regulations, reprinting of stationary, and for photography and other reproduction needs. The printing of prospectus materials for development opportunities advertised by PADC in the project area during FY 1987 would also be funded by this budget.

25.0 Other services

Budget for FY 1986	Requested for FY 1987	Change FY 1986-FY 1987
$300,000	$300,000	0

The cost of obtaining various services not described elsewhere in this budget request is estimated to require $300,000 in FY 1987. The largest single expense of this category will be that of continuing PADC's administrative services contract with the General Services Administration, where personnel, payroll, and financial services are provided at an expected budget-year cost of $100,000.

Other, future needs for which the $300,000 budget is requested includes the cost of maintaining office word processing, copier and computer equipment; messenger/courier service; recording of board meeting deliberations; corporate memberships in professional organizations; staff training; newspaper announcements and advertising for employees and contractor bids; design layout of the annual report, and a variety of other administrative needs that arise in the course of the year. A possible additional expenditure in this "other services" category would result should GAO schedule financial audit of the Corporation for FY 1987.

26.0 Supplies and materials

Budget for FY 1986	Requested for FY 1987	Change FY 1986-FY 1987
$40,000	$45,0[illegible]	+ $5,000

The cost of office supplies and materials will require an estimated budget of $45,000 in FY 1987. While most of this budget is needed for the purchase of paper, pencils and ordinary office supplies, PADC will use a portion to continue to subscribe to publicationns or newsletters that maintain and enhance professional knowledge of real estate, historic preservation, legal, and urban land development trends.

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31.0 Equipment

Budget for FY 1986	Request for FY 1987	Change FY 1986-FY 1987
$25,000	$50,000	+ $25,000

The current word processing equipment utilized by the staff for more than five years is experiencing mechanical wear, so that the purchase of new equipment for secretarial use will be necessary in FY 1987. The purchase of an additional microcomputer for professional staff use may also be necessary.

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The Pennsylvania Avenue Development Corporation requests $3,774,000 in Public Development funds for FY 1987. Approximately 80 percent of this request represents funding needed for the public improvements program, while the remaining 20 percent is needed to support the development of a Corporation-owned property on a square east of the FBI Building.

The FY 1987 budget request for Public Development compares to PADC's 1986 appropriation as follows:

	FY 1986	FY 1987	Change FY 1986-FY 1987
Public Improvements	$3,230,000	$3,024,000	$ -206,000
Program Support	--	750,000	+750,000
Reduction by P.L. 99-177	- 139,000	--	+139,000
	$3,091,000	$3,774,000	$+683,000

A discussion of the public improvements and program support components of the FY 1987 budget request begins on the following page. The last page of this discussion estimates the effect of the reduction of $139,000 to the FY 1986 Public Development appropriation pursuant to Public Law 99-177.

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Public Improvements

Budget authority of $3,774,000 is requested for (1) the fabrication and installation of pedestrian lights on the completed sidewalks of Pennsylvania Avenue and (2) to continue the essential services of construction management and engineering firms during FY 1987, when a considerable volume of public improvements construction work will be underway.

Current Status of Public Improvements Program

The completed projects of the PADC public improvements activity include Pershing Park, Western Plaza, John Marshall Park, the new roadways and south sidewalks between 15th Street and 3rd Street, new sidewalks on the Avenue's north side where adjacent development is complete, and new benches, trees, drinking fountains, and lighting on these same completed sidewalks.

The largest of the public improvements projects still to be completed is the park at Market Square, which will include the privately-funded U.S.Navy Memorial. The south portion of this construction project, which is in evidence adjacent to the Avenue entrance to the National Archives Building, has been underway since mid-1985 and will be completed by late spring, 1986. While utility work in the portion of the park on the north side of Pennsylvania Avenue, including the Navy Memorial, has been completed, the major construction effort here commenced in December, 1985, with funds made available, in part, through a reprogramming of funds previously appropriated for the Indiana Avenue roadway ($900,000), business relocation payments ($1,000,000), and historic preservation ($600,000). Construction of the park on the north side of Pennsylvania Avenue is now well underway, with the first major phase scheduled for completion in 1986. The completion of the northern perimeter of Market Square Park will be scheduled to coincide with the construction of the neighboring Market Square commercial/residential project on Squares 408 and 432.

The Indiana Plaza project also is to be completed. The two principle construction contracts for the plaza include one for the plaza itself and another for the roadway and a portion of the north sidewalk. The construction of the plaza, which will complement the renovation and construction of several private development projects underway on Squares 458, 459 and 460, is scheduled to begin in FY 1986, with actual construction work continuing into FY 1987. The construction of the new Indiana Avenue roadway will be rescheduled at a later date.

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The future completion of various development projects along Pennsylvania Avenue's north side will permit PADC to complete the construction of new sidewalk and associated improvements where such construction was infeasible at prior times. During 1986, new sidewalks and/or improvements will be constructed on Pennsylvania Avenue in front of the Willard Hotel and office addition on Square 225, the Cadillac-Fairview office and retail complex on Square 348, and the Westminster Corporation's first-phase office building on Square 460. The sidewalk on Pennsylvania Avenue in front of the Old Evening Star Building is scheduled to be completed in conjunction with the opening of the building, after its restoration and new addition is complete,in 1988 at the earliest.

The Corporation's program for improving selected sidewalks north of Pennsylvania Avenue, for which FY 1986 appropriations have been provided, will commence in 1986 as well.

The map on the following page indicates the location and status of completion of the various funded projects of the PADC public improvements program activity (except for the sidewalk program north of Pennsylvania Avenue, which is a widely-dispersed activity).

FY 1987 Request

The Corporation's FY 1987 public improvements budget request for $3,024,000 consists of $1,774,000 for the fabrication and installation of pedestrian lights on the north and south sidewalks of Pennsylvania Avenue and $1,250,000 for essential construction management and engineering contracts.

Pedestrian lights are the third component of the lighting plan for the Avenue. As originally conceived, Pennsylvania Avenue's sidewalks and roadway would be illuminated by three types of fixtures. The first two fixtures--the high mast lights and decorative lights--have already been fabricated and installed where adjacent development is complete. The former serves to illuminate the roadway itself, while the later, installed at the sidewalk curb-line, is designed to provide decorative sparkle with limited illumination to the sidewalk. The third type of light fixture--the pedestrian light-- would be installed adjacent to trees on the sidewalks, and would provide much-needed light for the evening hours (during which significantly increased pedestrian use is anticipated).

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The installation of pedestrian lights was planned as the last element of the sidewalk improvement program, owing to the need to allow the trees adjacent to which they would be placed to grow and develop, so as to eliminate physical interference between the lower tree branches and the fixture's head.

A depiction of the pedestrian light fixture--approved by the PADC Board--which would be fabricated and installed is shown on the following page.

The balance of the $3,024, 000 public improvements request, an amount of $1,250,000, is needed to continue the contractual services of a construction management firm and a civil engineering firm during a year when considerable construction work will be undertaken. As mentioned previously, Market Square Park, Indiana Plaza and selected sidewalks north of and on the Avenue will be undergoing construction or improvement. These contractors provide daily inspection services, change order estimates, materials testing and redesign services that are critical to the construction process and without which the public improvements schedule could not be met.

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Program Support

An amount of $750,000 is requested to recover a cost incurred by PADC when it purchased property whose development use is restricted by historic preservation requirements for the site. In 1978 PADC purchased the former Lansburgh's Department Store property, with the knowledge that the site's future redevelopment and economic value would be limited by the requirement that certain historic structures are to remain in place. Specifically, development will not be permitted above the roofline of several historic structures included in the Lansburgh development site, with the result that buildable volume and, hence, economic value is reduced. Now that the Corporation's seven-year lease of the building is nearing completion and Lansburgh's will be a candidate for redevelopment in FY 1987, the magnitude of the cost borne by this restriction can be measured.

The requested $750,000 would be transferred to the Land Acquisition and Development fund, where it would be used to retire debt associated with the purchase price of the Lansburgh and the adjoining properties which comprise the development site to be publicly advertised for development proposals in 1986. In this manner, the Land Acquisition and Development fund would receive both actual proceeds from the sale or lease of this site to a developer and the $750,000 in additional revenue this fund would have received were it not for the above-noted restrictions.

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Impact of FY 1986 Appropriation Sequestration

The sequestration of PADC's 1986 appropriation in accordance with Public Law 99-177 results in a deduction of $139,000 of the $3,230,000 in Public Development appropriations for public improvements. The effect of this reduction will be that some sidewalk improvements north of the Avenue planned for FY 1986 will need to be deferred. PADC has not yet determined which sidewalk project will be deferred.

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Revenue from the sale or lease of real estate has proved sufficient in the past several years to preclude the need for additional requests for borrowing authority. Although, for the same reason, PADC is not requesting additional borrowing authority for FY 1987, there will nonetheless be land acquisition activity by the Corporation in the budget year. This narrative briefly summarizes the status of land development in the project area and the prospective FY 1987 square development activities of PADC.

A number of development projects approved by PADC are complete and open for occupancy. Beginning with projects in the westerly portion of the PADC area and then moving in an easterly direction, these completed projects include the following:

Square 254	National Press Building - Office, Retail 1301 Pennsylvania avenue - Office, Retail National Place - Marriott Hotel, Office Space, The Shops, National Theatre
Square 291	1201 Pennsylvania Avenue - Office, Retail
Square 431	717 D Street - Office
Square 460	Sears World Trade Center Building - Office

Projects approved by PADC which still are to be completed are as follows:

Square 225	Willard Hotel and Office/Retail Building (Opening 1986)
Square 291	425 13th Street - Office (Opening 1987)
Square 348	1001 Pennsylvania Avenue - Office, Retail (Opening 1986)
Square 322	Old Evening Star Building and Office/Retail Addition (Opening 1988)
Square 408-432	Market Square Project - Office, - Residential, Retail (Opening 1988-1989)
Square 459-460	Westminster Project - Office, Hotel, Retail, Residential (Opening 1986-1988)

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Square 458	615 Indiana Avenue - Office (Opening 1987) Hub - Office and Retail (Opening 1989) Fireman's Insurance Building - Office (Opening 1987)
Square 407	Gallery Row Project - Office, Art Space, Retail (Opening 1986)
Square 431	Lansburgh's - Office, Art Space, Retail, Residential (Developer to be selected)

During Fy 1987, PADC anticipates requests from developers to assist, in accordance with PADC policy, in the assemblage of sites for development to meet the objectives of the Plan. The squares where such land acquisition activities are expected to occur in FY 1987 are Squares 406,407, and 457. The Corporation will be actively supporting a variety of private development efforts, especially in the area east of the FBI Building, that will contribute to the creation of housing, in addition to monitoring the progress of development projects underway but not yet completed.

The map and table on the next three pages locate and describe completed and on-going private development in the PADC area.

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PRIVATE INVESTMENT IN THE PADC AREA

1. Willard Project
   Carr Company
   $110 million

2. National Press Club
   National Press Building Corporation
   $75 million

3. National Place
   Quadrangle/Marriott
   $180 million

4. 1301 Pennsylvania Avenue
   Quadrangle Development Corporation
   $21 million

5. Pennsylvania Building
   Pennsylvania Building Associates
   $17 million

6. 1201 Pennsylvania Avenue
   Cabot, Cabot & Forbes
   $52 million

7. Presidential Building
   Pennsylvania Avenue Joint Venture
   $5 million addition

8. Evening Star
   Jonathan Woodner Company
   $30 million

9. 1001 Pennsylvania Avenue
   Cadillac Fairview Development Corporation
   $205 million

10. Market Square
    Avenue Associates
    $145 million

11. 717 D Street
    717 D Street Restoration Association
    $3.6 million

12. Gallery Row
    Carley Capital Group
    $7 million

13. 601 Indiana Avenue
    Duro Development Corporation
    $15 million

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14. 615 Indiana Avenue
Farr-Jewett & Associates
$40 million

15. HUB/Fireman's
Farr-Jewett & Associates
$30 million

16. Sears House
Sears World Trade, Inc.
$8 million

17. Pennsylvania Avenue Triangle
Westminster Investing Corporation
$125 million

18. Canadian Chancery
Government of Canada
$40 million

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UNITED STATES HOLOCAUST MEMORIAL COUNCIL

Budget Justification, Fiscal Year 1987

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UNITED STATES HOLOCAUST MEMORIAL COUNCIL

FISCAL YEAR 1987 BUDGET JUSTIFICATION

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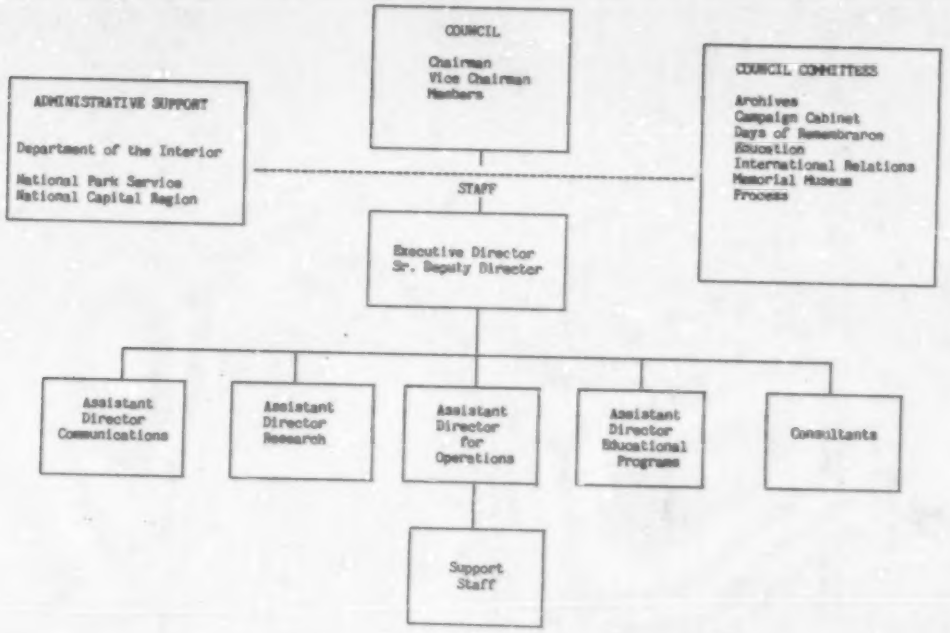
UNITED STATES HOLOCAUST MEMORIAL COUNCIL



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General Statement

The United States Holocaust Memorial Council was established by the Congress (Public Law 96-388) for the following principal purposes:

1. Provide for appropriate ways for the Nation to commemorate the Days of Remembrance as an annual national civic commemoration of the Holocaust.

2. Plan, construct and oversee the operation of a permanent living memorial museum to the victims of the Holocaust.

The projected magnitude of the issues confronting the Council going into Fiscal Year 1987 will be to assure that those research and development functions essential to completing the planning of the internal components of the museum keep pace with the physical construction schedule which will begin in Fiscal Year 1986. Prior to the opening of the Museum in early 1989, the Council must amass educational, historical and research data, archival material, artifacts, and other curatorial items. This will require intensive research for preparing exhibitry planning prior to decision for acquisition or use in the Museum. Furthermore, it is essential that current federally held documents be researched for determination of their archival importance as well as determinations made for their preservation.

The following summary provides a comparison between the 1986 appropriations to date and the 1987 request: (dollars in thousands)

Appropriation	FY 1986 Enacted To Date	FY 1986 Adjusted Appropriation	FY 1987 Estimate	Inc (+) or Dec (-) from Enacted	Fulltime Equivalent Employment
Salaries and Expenses	2,112	2,021	2,057	-55	29

General Administration

The total request for General Administration includes rental payments to GSA, communications, utilities, printing, reimbursement to Department of the Interior, supplies and equipment.

Authorization: Public Law 96-388, dated October 7, 1980, created the United States Holocaust Memorial Council and provided the authorization for appropriations through Fiscal Year 1983 and Public Law 98-146 provided appropriations for Fiscal Year 1984. Public Laws 98-473 and 99-88 provided appropriations for Fiscal Year 1985 in the amount of $2,003,000. A 1987 Fiscal Year authorization request in the amount of $2,057,000 is being forwarded to Congress.

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Appropriation Language Sheet

Salaries and Expenses

For expenses of the Holocaust Memorial Council, as authorized by Public Law 96-388, [$2,125,000] $2,057,000: Provided, That persons other than members of the United States Holocaust Memorial Council may be designated as members of committees associated with the United States Holocaust Memorial Council subject to appointment by the Chairman of the Council: Provided further, That any persons so designated shall serve without cost to the Federal Government. (Department of the Interior and Related Agencies Appropriations Act, 1986, as included in Public Law 99-190; additional authorizing legislation to be proposed.)

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Summary of Requirements

Appropriation: Salaries & Expenses	FTE	Amount
Summary of Base Adjustments:		
Base Budget Request, 1986	29	1,950
P.L. 99-190 Adjustment (net)		+ 162
Appropriation Currently Available	29	2,125
P.L. 99-177 Reduction		- 91
Adjusted Appropriation	29	2,021
Adjustments to Base:		
Adjustment for 1986 impact of P.L. 99-177	...	+ 91
1987 Base Budget	29	2,112
Program Changes	...	- 55
Total Requirements (1987 Estimate)	29	2,057

Justification of Base Adjustments

This adjustment is representative of the Council's efforts toward maintaining the Administration's overall budget reduction goals.

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Justification of Program and Performance

Activity: Council Operations

Program Elements	1986 Enacted To Date	1986 Adjusted Appropriation	1987 Base	1987 Estimate	Inc (+) Dec (-) From Base
Council Direction $	1083	...	1083	1121	+ 38
(FTE-T)	(17)		(17)	(17)	
Museum Development $	770	...	770	811	+ 41
(FTE-T)	(10.5)		(10.5)	(11.5)	+ 1
Nat. Archives Project $	135	...	135	0	-135
(FTE-T)	(1)		(1)	(0)	- 1
Days of Remembrance $	124	...	124	125	+ 1
	(.5)		(.5)	(.5)	-0-
	2112	2021	2112	2057	- 55
(FTE-T)	(29)		(29)	(29)	(-)

Gramm-Rudman-Hollings Impact

	1986 Enacted To Date	P.L. 99-177 Reduction	1986 Adjusted Appropriation
Salaries & Expenses	2112	-91	2021

As a result of the $91 thousand P.L. 99-177 reduction, funding allocated to the Museum Development unit has been reduced in Fiscal Year 1986.

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Justification of Program and Performance (Continued)

36 U.S.C. 1401	Public Law 96-388 of 1989, as amended, established the United States Holocaust Memorial Council to: provide for appropriate ways for the nation to commemorate the Days of Remembrance; plan, construct and oversee the operation of a permanent living memorial to the victims of the Holocaust; and to develop a plan for carrying out the recommendations of the President's Commission on the Holocaust.

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Council Direction

The Council membership initiates the Council's basic program activities, establishes policies and oversees the conduct of Council actions. The full membership meets at least twice yearly, usually in Washington, D.C., although special meetings and meetings at the site of Council-sponsored activites are not unusual. The Council members also act through a committee structure, ranging from committees that provide comment and recommendations on museum design and content, to committees which provide oversight to the fundraising activities of the Council. While committees may include members who are not Council members, these individuals serve at no charge to appropriated funds.

Executive leadership of the Council is provided by the Chairman, who works closely with the Executive Director. The Council's day-to-day work is performed by the Executive Director and staff under the Chairman's direction. Almost daily telephone contact with the Executive Director and regular review of important correspondence provides the Chairman with constant oversight of the Council's operations.

The Council Direction unit provides administrative services (personnel, budget, finance, procurement, travel, etc.) with support from the Department of the Interior on a reimbursable basis. These charges also include all support for the Museum Development, National Archives Project and Days of Remembrance Units. Rent, communications, printing, other services (contracting), supplies, and equipment for the entire Council operation are reflected as administrative costs in the unit. The Office of General Counsel provides legal services to the Council and staff, and coordinates with the Department of Justice and other Federal agencies as required. Also included in this unit are the Council staff responsible for providing Executive Direction to the statutorily mandated national civic commemoration of the Holocaust, and staff responsible for the preparation of other required annual reports, the Council's publications and information and automated data processing support services for the entire Council.

Request for 1987	FY 1987 Base 1983	FY 1987 Estimate 1121	Difference + 38
(FTE-T)	(17)	(17)	(-)

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Council Direction (Continued)

Distribution by object class

The object class detail for the requested $1,121 is as follows:

	FTE-T	Amount
Personnel Compensation	(17)	$518,000
Personnel benefits		77,000
Travel & transportation of persons		26,000
Travel & transporation of things		3,000
Rental payments to GSA		177,000
Other Rent, communications, and utilities		30,000
Printing		20,000
Other services		269,000
Supplies		6,000
Equipment		15,000
	Total	$1,121,000

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Museum Development

In furtherance of the mandates of its enabling legislation, the Council, over the past five years, has now completed its conceptual design to construct a museum which will also serve as a memorial to the victims of the Holocaust.

On October 4, Secretary of the Interior, Donald P. Hodel, approved the architectural plans for the Museum and certified that sufficient funds are available to complete construction. Later that same date, a formal stake driving was held signifying commencement of construction. On October 16, Chairman Elie Wiesel turned the first shovel of earth for the Groundbreaking Ceremonies.

The 300,000-square-foot Museum will be located near the Mall and 1,500 yards from the Washington Monument. It will stretch from 14th to 15th Streets between Independence Avenue and C Street, S.W.

The Museum will include a memorial Hall of Remembrance, spaces for permanent and changing exhibitions that tell the story of the Holocaust through artifacts, film and documents; a cultural center for seminars and events; expanded educational exhibits, and a research library and archives. Information on Holocaust topics will be made available by computer to schools, universities and other Holocaust research centers worldwide.

In addition, the Museum will offer a full schedule of public education programs, including lectures, film series and classes.

The Council remains cognizant of its responsibility, under the law, to raise substantial funds from the private sector, for costs beyond those of bricks and mortar construction for which Federal appropriations are expressly prohibited. The major fund-raising campaign effort was launched in Fiscal Year 1984 and was bouyed by President Reagan's decision to serve as the Campaign's Honorary Chairman. The success of the campaign during the past Fiscal Year is clearly indicative that the efforts to build this living Memorial Museum is supported by people from all sectors of American life - religious, business and civic leaders; veterans; foundation officers; government officials and many others.

The Christian community, as individuals and institutions, is offering support. Non-Jewish ethnic Americans, such as Slavs, Poles, Gypsies and Armenians, are contributing to the effort. The nation's governors are also actively working to support the Museum through official fund raising events in their respective state houses. Those already held have resulted in $1 million in pledges at each, and thus far, more than 30 such events have been scheduled or committed.

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Museum Development (Continued)

Equally as important as the building design concept is the Museum's broad mandate in public education which requires that it address millions of Americans of all ages and backgrounds, both those who will visit the Museum in Washington and many others who are unable to do so. The programmatic exhibit elements in the Museum will describe the unique tragedy of European Jewry -- its lost people and culture -- the spread of evil to other victims, the complex unfolding of the Nazi era while the free world looked on, the instances of armed and spiritual resistance and rescue, the survivors and their liberators, and the awesome implications for all humankind of the Kingdom of Night. This challenge will be met in a facility that integrates historical authenticity and innovative exhibit design with a diverse range of learning resources and sophisticated teaching techniques.

In addition to the Museum's documentary resources, there will be a full schedule of public educational programs. Lectures, film series, conferences, seminars and classes will be held both at the Museum and in outreach efforts. Moreover, the Museum will provide an extensive traveling exhibitions service for the benefit of other museum, educational and civic institutions throughout the nation and the world.

The United States Holocaust Memorial Museum has a special obligation and opportunity to support the highest level of academic research, curriculum development, and teacher awareness and training services. Archival, artifact and library collections will provide fundamental resources for resident and visiting scholars. The Museum will be a central address for linking the evaluation and sharing of Holocaust curricula, textbooks, documents, audiovisual materials and teaching techniques.

The Museum also will be instrumental in integrating the archival collections of Holocaust memorial and research institutions throughout the world, both by accessioning microfilm, microfiche and videodisc copies of documents and photographs, and by creating computerized, universal indices and glossaries for reference and research. This is a notable example of how this important new institution will be able to provide leadership and service to other museum, library and research institutions in the United States and abroad.

Toward this mandate, the Council has made significant progress in establishing and testing educational tools, identifying archival material and making national and international contacts toward achievement of specific museum/educational goals and objectives. With the help of expert consultants from the United States and abroad: we are continuing to develop the conceptual outline of our permanent exhibit design approach; we are completing plans for a prototype demonstration in 1986 of the elements of an international, automated archival system for locating Holocaust materials residing in all the important Holocaust centers, museums and repositories in the world -- a badly needed resource for museums and scholars alike; we have developed, with the assistance of the University of Maryland, a novel and exciting approach to museum education involving a computer-assisted, interactive Holocaust encyclopedia; and, have completed a demonstration model of a multi-media presentation of a significant Holocaust subject -- in this case, the fate of the Riga Ghetto.

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Museum Development (Continued)

The development of such educational tools by the Council is essential if the Museum is to become a service institution that will provide unprecedented access to Holocaust curricular, teacher training and archival, artifact, video and film resources using sophisticated techniques.

During Fiscal Years 1986 and continuing into 1987 and ensuing years, both the programmatic and development work will shift dramatically: from architecture to construction, and from the preliminary program planning to detailed planning for exhibitions, acquisitions of archives, preservation of archival and curatorial materials, educational content as well as methods for accessing archival and research data and making the contents of the Museum's internal archives available to its many publics, ranging from the interested national and international tourist to survivors to liberators to students to highly respected academicians. What's more, substantive historical research will continue with respect to the subject matters to be addressed in the Museum's principal exhibit and educational spaces.

The facility to be created near the National Mall will be a unique institution that integrates permanent and temporary exhibitions with archival collections of documents, artifacts, film, and other resources, as well as with educational services for both scholarly research and public education. Once the entire center is operational, it will serve not only hundreds of thousands of annual visitors, but also millions of Americans who will benefit from outreach programs in schools, community organizations, and other forums.

With the scheduled beginning of construction, Fiscal Year 1986 was the culmination of a carefully staged, five-year planning effort to create the concepts for the United States Holocaust Memorial Museum.

During Fiscal Year 1987, the detailed planning must continue to determine the specific configurations of the exhibit, archival and education program components of the facility. Planning to date envisions an interrelated complex consisting of archival and curatorial material as well as audiovisual presentations to display for the public the story of the Holocaust; a national memorial aspect of the facility; and further exhibits, library, archives and computerized facilities available to the general public, educators, students and other academicians to study and research the history of the Holocaust, as well as make available to the educational community access to the materials and collections of other national and international Holocaust Resource Centers.

Funds for Museum development will also be applied to the essential education development planning for four kinds of work: coordination of outreach services (e.g., to inaugurate awareness and training programs in cooperation with national educational associations and with the Department of Education); computer system design (to plan research and basic instruction software and resultant hardware requirements); and media systems design (to include videotape, disc and related technologies). Comparable detailed planning is underway to identify specific exhibit and archival approaches.

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Museum Development (Continued)

(dollars in thousands)

Request for 1987	FY 1987 Base	FY 1987 Estimate	Difference
$	770	811	+41
(FTE-T)	(10.5)	(11.5)	(+1)

Distribution by object class

The object class detail for the requested $811,000 is as follows:

	FTE-T	Amount
Personnel compensation	(11.5)	$303,000
Personnel benefits		38,000
Travel & transportation of persons		59,000
Other services		411,000
Total		$811,000

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National Archives Project

In the Council's attempt to maintain an austere budget, the Archive Project will not be funded in 1987.

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Days of Remembrance

The Days of Remembrance Programs have continued to be increasingly successful and expanded significantly in Fiscal Year 1985 and similar success is anticipated during Fiscal Year 1986. There was full participation in all the 50 state capitals as well as ceremonies and proclamations at the local government level. To illustrate the truly national nature of the Days of Remembrance, the Council held the Days of Remembrance Evening of Commemoration Through the Performing Arts in Philadelphia to coincide with the American Gathering of Holocaust Survivors. This Evening, which featured nationally respected commentators and artists in the performing arts, reached over 4,000 people who gathered from all over the United States as well as attendees from foreign countries. Support for the Council's activities was strengthened with the establishment of an exhibit and information center in the Conference facility. This was truly a milestone for the Council.

Also in Fiscal Year 1986, the Council expanded its extensive effort to publicize and achieve cooperation and scheduling of education programs and/or ceremonies in secondary school libraries throughout the nation.

The Council received and filled more than 5000 requests for educational material relating to Days of Remembrance and the Holocaust from secondary education schools, libraries and other institutions. There is clearly public support for expanding the work begun by the Council only five years ago.

It is critical that this level of support and effort to expand the educational features related to Days of Remembrance be continued.

(dollars in thousands)

Request for 1987	FY 1987 Base	FY 1987 Estimate	Difference
$	124	125	(+1)
(FTE-T)	(.5)	(.5)	(-)

Distribution by object class

The object class detail for the requested $125,000 is as follows:

	FTE-T	Amount
Personnel compensation	(.5)	$24,000
Personnel benefits		2,000
Printing		45,000
Other services		54,000
Total		$125,000

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UNITED STATES HOLOCAUST MEMORIAL COUNCIL
Summary of Requirements by Object Class
(Dollar amounts in thousands)

Appropriation: Salaries and Expenses

Object Class	1987 Base FTE	1987 Base Amount	1987 Estimate FTE	1987 Estimate Amount	Inc.(+) or Dec. (-) FTE	Inc.(+) or Dec. (-) Amount
11 Personnel compensation:						
11.1 Permanent positions - FTE-P	19	$ 509	27	$ 771	+8	+262
11.3 Positions other than permanent	10	302	2	32	-8	-270
11.5 Other personnel compensation	-	52	-	42	-	- 10
Total personnel compensation	29	863	29	845	—	- 18
Other Objects						
12.1 Personnel benefits		86		97		
21.0 Travel & transportation of persons		86		85		- 1
22.0 Travel & transportation of things		2		3		+ 1
23.1 Rental payments to GSA		215		177		- 38
23.2 Communications, utilities, and other rent		30		30		—
24.0 Printing and reproduction		72		65		- 7
25.0 Other services		701		734		+ 33
26.0 Supplies and materials		26		6		- 20
31.0 Equipment		31		15		- 16
Total Requirements		$2,112		$2,057		- 55

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UNITED STATES HOLOCAUST MEMORIAL COUNCIL
SALARIES AND EXPENSES
PROGRAM AND FINANCING (IN THOUSANDS OF DOLLARS)

95-3300-0-1-806

		1985 actual	1986 estimate	1987 estimate
Program by activities:				
10.0001	Total obligations	2,003	2,112	2,057
Financing:				
25.0001	Unobligated balance lapsing	—	—	—
39.0001	Budget authority	2,003	2,112	2,057
Budget authority:				
40.0001	Appropriation	2,031	2,112	2,057
40.0002	Reduction pursuant to P.L. 98-473	41	—	—
43.0001	Appropriated (adjusted)	1,990	—	—
44.2001	Supplemental for civilian pay raise	13	—	—
Relation of obligations to outlays:				
71.0001	Obligations incurred, net	2,003	2,112	2,057
72.4001	Obligated balance, start of year	606	87	50
74.4001	Obligated balance, end of year	-87	-50	-50
77.0001	Adjustments in expired accounts	—	—	—
89.0000	Outlays	2,522	2,149	2,057
90.0001	Outlays, excluding pay raise supplemental	2,509	2,149	2,057
91.2001	Outlays from civilian pay raise supplemental	13	—	—

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UNITED STATES HOLOCAUST MEMORIAL COUNCIL
Object Classification
(in thousands)

Identification Code 953300-0-1-806		1985 actual	1986 estimate	1987 estimate
	Personnel Compensation			
11.1	Full-time Permanent	301	509	771
11.3	Positions other than Full-time Permanent	519	302	32
11.5	Other Personnel Compensation	9	52	42
11.9	Total Personne. Compensation	829	863	845
12.1	Personnel Benefits: Civilian	86	86	97
21.0	Travel & Trans. of Persons	116	86	85
22.0	Travel & Trans. of Things	—	2	3
23.0	Rent, Communications & Utilities	245	245	207
24.0	Printing & Reproduction	88	72	65
25.0	Other Services	604	701	734
26.0	Supplies & Materials	15	26	6
31.0	Equipment	20	31	15
		2003	2112	2059

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